Comprehensive Airport Land Use Compatibility Plan for the Environs of

San Francisco International Airport

PREPARED FOR:

City/County Association of Governments of San Mateo County
Redwood City, California

RICONDO® & ASSOCIATES

IN ASSOCIATION WITH:

Jacobs Consultancy

Clarion Associates

MAY 2012
DRAFT FINAL

Comprehensive Airport Land Use Compatibility Plan for the Environs of San Francisco International Airport

PREPARED FOR:

The City/County Association of Governments of San Mateo County (C/CAG) Board of Directors in its Designated Role as the Airport Land Use Commission for San Mateo County, Redwood City, California

PREPARED BY:

RICONDO & ASSOCIATES, INC.

IN ASSOCIATION WITH:

Jacobs Consultancy

Clarion Associates

May 2012

Final Draft

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Table of Contents

List of Appendices

List of Tables

List of Exhibits

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PREFACE

This document represents an update of the state-mandated comprehensive airport land use compatibility plan (~~CLUP~~ALUCP) for the environs of San Francisco International Airport (SFO or the Airport).

Requirements of California Law

State law requires airport land use commissions to prepare and adopt ~~a CLUP~~an ALUCP~~ALUCP~~ for each public use and military airport within their jurisdiction. Further, they are required "to review the plans, regulations, and other actions of local agencies and airport operators…"[1]

Based on state law and guidance provided in the *California Airport Land Use Planning Handbook*[2], the SFO ~~CLUP~~ALUCP has four primary areas of concern:

- Aircraft Noise Impact Reduction – To reduce the potential number of future airport area residents who could be exposed to noise impacts from airport and aircraft operations.
- Safety of Persons on the Ground and in Aircraft in Flight – To minimize the potential number of future residents and land use occupants exposed to hazards related to aircraft operations and accidents.
- Height Restrictions/Airspace Protection – To protect the navigable airspace around the Airport for the safe and efficient operation of aircraft in flight.
- Overflight Notification – To establish an area within which aircraft flights to and from the Airport occur frequently enough and at a low enough altitude to be noticeable by sensitive residents. Within this area, real estate disclosure notices shall be required, pursuant to State law.

The airport/land use compatibility policies and criteria contained in this ~~CLUP~~ALUCP apply only to new development. Under State law, an airport land use commission has no jurisdiction over existing development unless that development is expanded or enlarged significantly, in which case it is treated as infill development subject to the policies in the ~~CLUP~~ALUCP.

[1] California Public Utilities Code, Section 21674(d).

[2] California Department of Transportation, Division of Aeronautics, *California Airport Land Use Planning Handbook*, October 2011.

Relationship to Airport Operations

Under California law, airport land use commissions have no jurisdiction over airport operations.[3] The law also requires that an ALUCP reflect the airport operator's long-range development plans, as reflected in the 20-year aviation activity forecasts and airport master plan or airport layout plan.[4] This ALUCP is based on the official 20-year aviation activity forecasts prepared for the City and County of San Francisco Airport Commission and on the latest FAA-approved airport layout plan.[5]

In adopting this ALUCP, the C/CAG Board acknowledges those forecasts and airport development plans as providing an appropriate foundation for airport land use compatibility planning in the SFO environs. C/CAG and its member jurisdictions, however, retain the right to consult and negotiate with the San Francisco Airport Commission and the SFO staff on all matters relating to airport development and operations, including noise abatement procedures.

Relationship to 1996 Comprehensive Airport Land Use Plan

This ALUCP is a comprehensive update of the San Francisco International Airport Land Use Plan in Chapter V of the 1996 San Mateo County Comprehensive Airport Land Use Plan (CLUP). Like the 1996 CLUP, this ALUCP includes airport land use compatibility policies related to noise, safety, and airspace protection.

- **Noise Compatibility** – The policies of the updated ALUCP are virtually the same as in the 1996 CLUP. Those policies required sound insulation and the grant of avigation easements for new housing and noise-sensitive institutions within the CNEL 65-70 dB range and considered those uses incompatible within the CNEL 70 dB contour. The noise contour map used for these policies in this ALUCP has been updated and represents forecast conditions in 2020.
- **Safety Compatibility** – The updated ALUCP establishes a set of five safety zones and declares as incompatible within those safety zones land uses serving vulnerable populations and land uses storing or processing large amounts of hazardous materials. These are new policies that were not in the 1996 CLUP.
- **Airspace Protection and Flight Safety** – The updated ALUCP includes the same basic policies as the 1996 CLUP. Those policies consider proposed construction that the Federal Aviation Administration (FAA) determines to be a hazard to air navigation as incompatible uses. As an aid to local planning officials and developers, the updated ALUCP provides more information about the FAA obstruction evaluation and hazard determination process. The updated ALUCP also incorporates mapping depicting the airspace that the FAA uses in its obstruction evaluation studies of proposed construction and that the Airport and airlines use in preparing comments on FAA obstruction evaluation studies.

[3] California Public Utilities Code, Section 21674(e).

[4] California Public Utilities Code, Section 21675(a).

[5] Jacobs Consultancy, "Forecasts of Total Aircraft Operations by Type," Technical Memorandum – Aviation Demand Forecasts, San Francisco International Airport, February 2010; Future Airport Layout, prepared for San Francisco International Airport by Ricondo & Associates, Inc., July 7, 2010.

The updated ALUCP also defines an Airport Influence Area within which the real estate disclosure requirements of state law apply.

Section 160 of the Vision 100 – Century of Aviation Act

Funding for this ~~CLUP~~ALUCP update was provided through the Federal Aviation Administration (FAA) Vision 100 - Section 160 Grant Program approved by Congress in December 2003. Section 160 of the Vision 100-Century of Aviation Reauthorization Act[6] authorized the FAA to make grants from the noise set-aside of the Airport Improvement Program (AIP) to local governments for compatible land use planning around large and medium hub airports that have never submitted a Federal Aviation Regulations (FAR) Part 150 noise compatibility program (NCP) to the FAA or that have not updated their NCP within the preceding 10 years. Eligible grantees must have the authority to prepare and adopt land use compatibility plans and regulations in the airport area. In addition, the grantee and the airport operator must have entered into a written agreement to prepare the compatible land use plan cooperatively.

Section 160 requires the project sponsor to submit the approved plan to the FAA for review and acceptance. Before FAA will accept the plan, it must determine that the plan meets the statutory criteria and includes the following information:

- Explanation of noise mitigation and noise abatement measures at the airport, and a demonstration that the plan recommendations do not conflict with those measures.
- Evidence of opportunities for public review and comment on plan recommendations prior to completing the plan.
- Identification of each measure the local government proposes to enact, with or without federal funding, anticipated cost of implementation, and anticipated benefits.
- Description of steps that must be taken to implement each measure and the anticipated time frame to implement or complete the measure.

All of these requirements have been met in this ~~CLUP~~ALUCP for SFO. The checklist in **Table P-1** describes where in this document evidence of compliance with these requirements is provided. It is included for the convenience of FAA reviewers.

[6] Public Law 108–176, December 12, 2003. Codified as 49 U.S.C. (United States Code), Section 47141.

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Table P-1 Checklist for Compliance with Vision 100, Section 160 Compatible Land Use Planning Requirements

Requirement	Response	Page Number in Plan	Comments
1. Have the noise contours used in the plan been provided by the airport operator and has the operator certified that they are representative of conditions at the airport as of the time they were submitted to the nonfederal government for use in preparing the land use compatibility plan? (PGL 05-5, p. 3)	Yes	Preface, p. P-4	
2. Is there evidence that the airport operator and the nonfederal government have prepared the land use plan cooperatively? (PGL 05-5, p. 3)	Yes	Appendix K	
3. Is there evidence that land use measures selected for evaluation were based upon achieving the goal established in Section 47141 to "achieve, to the maximum extent possible, compatible land uses consistent with Federal land use compatibility criteria under section 47502(3) and that those compatible land uses will be maintained"? (PGL 05-5, pp. 3-4)	Yes	Chapter 3, pp. III-6 – III-8; Chapter 4, pp. IV-1, IV-12 – IV-18	The Federal land use criteria under section 47502(3) (US Code Title 49) are the noise/land use compatibility criteria described in 14 CFR Part 150. The noise compatibility policies described in Chapter 4 and the noise compatibility criteria described in Policy NP-2 (pp. IV-17 – IV-18) are consistent with Part 150 guidance. The policies in Chapter 3 are intended to ensure that compatible uses are maintained and that noncompatible uses are not enlarged.
4. Have existing noise mitigation and noise abatement measures been disclosed? (PGL 05-5, p. 4)	Yes	Chapter 2, pp. II-39 – II-42	
5. Is there a demonstration that the plan recommendations do not conflict with existing airport mitigation programs? (PGL 05-5, p. 4)	Yes	Chapter 3, pp. III-6 – III-8; Chapter 4, pp. IV-1, IV-12 – IV-18	All noise compatibility policies in the ~~CLUP~~ALUCP are intended to ensure that new noise-sensitive development includes measures consistent with the mitigation measures in the Part 150 NCP (sound insulation and avigation easements).
6. Is there evidence of an opportunity for public involvement in the planning process? (PGL 05-5, p. 4)	Yes	Appendix K	Prior to final adoption of the ~~CLUP~~ALUCP, C/CAG must complete an environmental evaluation of the ~~CLUP~~ALUCP pursuant to the California Environmental Quality Act (CEQA). C/CAG must hold a public hearing prior to adopting the ~~CLUP~~ALUCP and establishing the updated Airport Influence Area defined in the ~~CLUP~~ALUCP.
7. Is each measure that the nonfederal government is prepared to enact clearly identified, along with the anticipated cost of implementation, the anticipated benefits of the measure, the steps that must be taken to implement the measure, and the anticipated time frame to implement the measure? (PGL 05-5, p. 4)	Yes	Chapter 1, pp. I-1 – I-3, I-13 – I-16; Chapters 3 and 4	Benefits of plan and responsibilities for implementation are described in Chapter 1. All policy measures of the ~~CLUP~~ALUCP are described in Chapters 3 and 4. Only administrative costs will be borne by C/CAG and local governments.
8. Is there evidence of approval of the plan by the airport owner or operator? (PGL 05-5, p. 4)	Yes	Preface, p. P-5	

SOURCE: U.S. Department of Transportation, Federal Aviation Administration. Program *Guidance Letter (PGL) 05-5, About Section 160 in Vision 100-Century of Aviation Reauthorization Act: Guidelines for Compatible Land Use Planning by State and Local Governments in Areas Around Large and Medium Hub Airports*, June 1, 2005, APP-500 and APP-600.

PREPARED BY: Ricondo & Associates, Inc., February 2012.

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AIRPORT OPERATOR'S CERTIFICATION OF NOISE CONTOUR MAPS

It is hereby certified that the 2015 and 2020 noise contour maps for San Francisco International Airport (SFO) were provided by the City and County of San Francisco to the City/County Association of Governments of San Mateo County (C/CAG) for use in updating the Comprehensive Airport Land Use Compatibility Plan (~~CLUP~~ALUCP) for the environs of SFO.

It is further certified that the 2015 and 2020 noise contour maps are the best and most current information available for describing prevailing noise exposure conditions at through the near-term future and are the best available information for land use compatibility planning.

Signed: _____ Date: _____

Name: _____

Title: _____

AIRPORT OPERATOR'S ACCEPTANCE OF ~~CLUP~~ALUCP

The updated Comprehensive Airport Land Use Compatibility Plan (~~CLUP~~ALUCP) for the environs of San Francisco International Airport, prepared by the City/County Association of Governments of San Mateo County (C/CAG) as documented in this official Draft ~~CLUP~~ALUCP document, has been reviewed by the management of San Francisco International Airport, a department of the City and County of San Francisco.

The management of San Francisco International Airport has participated in the preparation of the updated ~~CLUP~~ALUCP and accepts the ~~CLUP~~ALUCP as consistent with the Airport management's objectives to promote airport land use compatibility in the SFO environs.

Signed: _____ Date: _____

Name: _____

Title: _____

C/CAG CERTIFICATION OF DRAFT ~~CLUP~~ALUCP

The updated Comprehensive Airport Land Use Compatibility Plan (~~CLUP~~ALUCP) for the environs of San Francisco International Airport (SFO), documented in this official Draft ~~CLUP~~ALUCP document, has been prepared by the City/County Association of Governments of San Mateo County (C/CAG) in consultation with the management of SFO and officials of the local governments within the proposed Airport Influence Area.

It is hereby certified that this is C/CAG's official Draft ~~CLUP~~ALUCP document that is to be evaluated for compliance with the California Environmental Quality Act and circulated among affected local jurisdictions and the public in preparation for its official adoption by the C/CAG Board of Directors.

Signed: _____ Date: _____

Name: _____

Title: _____

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1 PURPOSE AND SCOPE

1.1 Scope of Plan

This document represents an update of the state-mandated comprehensive airport land use compatibility plan (~~CLUP~~ALUCP) for the environs of San Francisco International Airport (SFO or the Airport). The Airport is one of three public use airports located in San Mateo County, California. The other two are County-owned general aviation airports: Half Moon Bay Airport and San Carlos Airport. This ~~CLUP~~ALUCP was prepared by the City/County Association of Governments of San Mateo County (C/CAG) in its designated role as the Airport Land Use Commission for San Mateo County, under the authority of the State of California Aeronautics Law, State Aeronautics Act, Chapter 4, Article 3.5, California Public Utilities Code (see **Appendix B**).

1.2 State Requirements for Airport/Land Use Compatibility Planning

In 1967, the State legislature adopted legislation requiring the establishment of airport land use commissions in counties with one or more airports serving the general public.[1] Amendments adopted by the legislature in 1970 required each commission to develop ~~CLUP~~ALUCPs for the areas surrounding public-use airports. The purpose of ~~CLUP~~ALUCPs, according to the legislation, is to provide for the orderly growth of airports and the surrounding areas "to minimize the public's exposure to excessive noise and safety hazards…"

Airport land use commissions were given authority to (1) specify how land near airports is to be used, based on safety and noise compatibility considerations; (2) develop height restrictions for new development to protect airspace in the vicinity of the airport; and (3) to establish construction standards for new buildings near airports, including sound insulation requirements.

State law specifically excludes airport land use commissions from exercising any authority over airport operations or over existing land uses.

[1] See California Public Utilities Code, Article 3.5, Section 21670, et seq. (as provided in Appendix B, p. B-5).

1.2.1 RESPONSIBILITIES OF CALIFORNIA DEPARTMENT OF TRANSPORTATION, DIVISION OF AERONAUTICS

State law directs the California Department of Transportation to "develop and implement a program or programs to assist in the training and development of the staff of airport land use commissions…"[2] Implementation of this directive has included the preparation and periodic update of the *Airport Land Use Planning Handbook* by the Division of Aeronautics.[3]

1.2.2 RESPONSIBILITIES OF AIRPORT LAND USE COMMISSIONS

State law requires airport land use commissions to prepare and adopt ~~a CLUP~~an ALUCP~~ALUCP~~ for each public use and military airport within their jurisdiction. The law requires that in preparing ~~a CLUP~~an ALUCP, the airport land use commission "shall be guided by the information prepared and updated pursuant to Section 21674.5 and referred to as the Airport Land Use Planning Handbook published by the Division of Aeronautics…"[4]

Airport land use commissions are further required "to review the plans, regulations, and other actions of local agencies and airport operators…" for consistency with their ~~CLUP~~ALUCPs.[5]

While airport land use commissions are vested by state law with limited land use planning authority, they have no specific implementation authority. For example, commissions have no authority to issue permits prior to construction of a building or grant approvals for the recording of subdivision plats. Actions by the airport land use commission can be overruled by local governments, although the override action must follow specific steps and be supported by adopted findings.

1.2.3 RESPONSIBILITIES OF LOCAL GOVERNMENTS

California law requires that, after an airport land use commission has adopted its ~~CLUP~~ALUCP, affected local governments must update their general plans, specific plans, and land use regulations to be consistent with the ~~CLUP~~ALUCP.[6] Alternatively, local governments may take steps, provided by law, to overrule part or all of the ~~CLUP~~ALUCP as it relates to their jurisdiction.[7] If the local government fails to take either action, then it must submit all land use development actions or facility master plans within the airport influence area to the airport land use commission for review. Even if the local government has amended its plans to be consistent with the ~~CLUP~~ALUCP or

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2 California Public Utilities Code, Section 21674.5(a).

3 The most recent version of the *Handbook* was published by the Division of Aeronautics in October 2011.

4 California Public Utilities Code, Section 21674.7(a).

5 California Public Utilities Code, Section 21674(d) and Section 21676.

6 See California Government Code, Section 65302.3.

7 The overrule process involves four mandatory steps: (1) the local agency must provide the local Airport Land Use Commission and the California Department of Transportation, Division of Aeronautics a copy of the proposed decision and findings within 45 days prior to any decision to overrule the commission; (2) the holding of a public hearing; (3) the adoption of findings that the local government's plans are consistent with the purposes of the State airport compatibility statute and that they provide for the orderly development of the airport; and (4) approval of the overrule action by a two-thirds majority of the governing body of the local government (see *California Airport Land Use Planning Handbook*, October 2011, pp. 5-15, et seq.).

has overruled the ~~CLUP~~ALUCP, it must still submit proposed new and amended general plans, specific plans, land use ordinances, regulations, and facility master plans to the airport land use commission for review.[8]

1.3 Airport Land Use Commission in San Mateo County

1.3.1 HISTORY

The C/CAG Board of Directors serves as the airport land use commission for San Mateo County. C/CAG was formed in November 1990 through a Joint Powers Agreement (JPA) between the County and the 20 incorporated cities in the County to prepare, adopt, and enforce state-mandated countywide plans. One of those plans is the San Francisco International Airport Comprehensive Airport Land Use Compatibility Plan (~~CLUP~~ALUCP). In February 1991, the County Board of Supervisors and the City Selection Committee of Mayors designated C/CAG as the Airport Land Use Commission for San Mateo County. C/CAG established an Airport Land Use Committee (ALUC) to advise the C/CAG Board on airport/land use compatibility planning issues. The Board, however, retained all decision-making authority as the official airport land use commission established under State law.[9]

1.3.2 C/CAG STRUCTURE AND MEMBERSHIP

C/CAG is an autonomous public agency and is not part of the governmental structure of the County of San Mateo. With respect to its duties as the Airport Land Use Commission in San Mateo County, C/CAG acts independently of the County of San Mateo Board of Supervisors. The membership of C/CAG, as of September 2011, is shown in **Table 1-1**. The geographic location of C/CAG member jurisdictions is depicted on **Exhibit 1-1**.

C/CAG has several designated roles and implements several multi-jurisdictional plans and programs. The C/CAG Airport Land Use Committee (ALUC) is one of several advisory committees established by the C/CAG Board to provide the Board with technical assistance in the preparation and implementation of plans and programs.

An Executive Director, as directed by the C/CAG Chairperson and the C/CAG Board of Directors, guides C/CAG activities. The Executive Director is retained via a contract with the C/CAG Board. The administration of C/CAG also includes assistance from the Executive Director's Advisory Committee, the C/CAG Finance Committee, and an administrative assistant to the Executive Director. Local agency staff provides support for various C/CAG programs and activities. San Mateo County Planning staff provides support for the airport land use commission function of C/CAG, as required by state law.

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[8] See California Public Utilities Code, Section 21676.5(a).

[9] Prior to 1990, the airport land use commission function had been the responsibility of the Regional Planning Committee (RPC) of San Mateo County. The RPC was created in 1964 as an advisory body to the County Board of Supervisors. The Board of Supervisors abolished the RPC after the formation of C/CAG. Many of the RPC's functions were assumed by C/CAG.

Table 1-1 City/County Association of Governments of San Mateo County

VOTING MEMBERS	
Town of Atherton	City of Millbrae
City of Belmont	City of Pacifica
City of Brisbane	Town of Portola Valley
City of Burlingame	City of Redwood City
Town of Colma	City of San Bruno
City of Daly City	City of San Carlos
City of East Palo Alto	City of San Mateo
City of Foster City	City of South San Francisco
City of Half Moon Bay	Town of Woodside
Town of Hillsborough	County of San Mateo
City of Menlo Park	
EX-OFFICIO (NON-VOTING) MEMBERS	
San Mateo County Transportation Authority	San Mateo County Transit District
Staff Assistance:	
• Richard Napier, C/CAG Executive Director; local agency staff for various activities.	

Note: All members are elected officials of the jurisdictions listed, unless otherwise noted; Membership as of September 2011.

SOURCE: City/County Association of Governments of San Mateo County (C/CAG). "2011 Board Members," www.ccag.ca.gov/board_members.html (accessed September 30, 2011).

PREPARED BY: Ricondo & Associates, February 2012.

LEGEND

- C/CAG Member Jurisdictions
- Airport Property
- Park or Recreation Area
- Municipal Boundary
- County Boundary
- Railroads
- Freeways
- Roads

NORTH

0 1 2 4 Miles

Exhibit I-1

C/CAG MEMBER JURISDICTIONS - 2011

Comprehensive Airport Land Use Plan

For The Environs of San Francisco International Airport

C/CAG

City/County Association of Governments of San Mateo County, California

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The ~~CLUP~~ALUCP for the environs of each airport in the county and C/CAG's review of local land use policy actions and issues are not subject to approval by the County Board of Supervisors. The County of San Mateo is a member of the C/CAG Board of Directors and is subject to the same requirements and procedures that apply to any other affected local agency regarding the ~~CLUP~~ALUCP referral and review process.

The County Board of Supervisors, in accordance with Public Utilities Code Section 21671.5(b), determines any compensation for C/CAG Board members. In addition, C/CAG cannot hire staff or contractors without the prior approval of the Board of Supervisors (Pub. Util. Code, Section 21671.5(d)). However, the County of San Mateo is required to provide staff assistance for the operation and support of C/CAG in its role as the San Mateo County Airport Land Use Commission (Pub. Util. Code, Section 21671.5(c)).

1.3.3 C/CAG AIRPORT LAND USE COMMITTEE (ALUC) ACTIVITIES AND MEMBERSHIP

The responsibilities of the C/CAG ALUC include: (1) reviewing proposed local agency land use policy actions for a determination of consistency with the applicable provisions contained in the ~~CLUP~~ALUCP and making recommendations to the C/CAG Board (the Airport Land Use Commission), regarding such actions and (2) preparing periodic draft amendments to the ~~CLUP~~ALUCP for adoption by the C/CAG Board. The C/CAG Board, acting as the Airport Land Use Commission for San Mateo County, makes all final decisions regarding airport/land use planning issues in San Mateo County, per the provisions in Public Utilities Code Section 21670, et seq.

The membership of the C/CAG ALUC, as of January 2011, is listed in **Table I-2**. The membership includes C/CAG member jurisdictions that are affected by one or more of the airports in San Mateo County. The San Mateo County planning staff provides staff support for the ALUC. An overview of ALUC activities is shown on **Exhibit I-2**.

Table I-2 C/CAG Airport Land Use Committee (ALUC)

City of Brisbane	City of San Bruno
City of Burlingame	City of San Carlos
City of Daly City	City of South San Francisco
City of Foster City	County of San Mateo/Aviation Representative
City of Half Moon Bay	Aviation Representative (appointed)
City of Millbrae	Half Moon Bay Airport Pilots Association (appointed)
City of Redwood City	

Note: All members are elected officials of the jurisdictions listed, unless otherwise noted; membership as of January 2011.

SOURCE: City/County Association of Governments of San Mateo County (C/CAG). "C/CAG Airport Land Use Committee (ALUC) Membership Roster January 2011," provided in an agenda packet for the ALUC Meeting, February 24, 2011.

PREPARED BY: Ricondo & Associates, Inc., February 2012.

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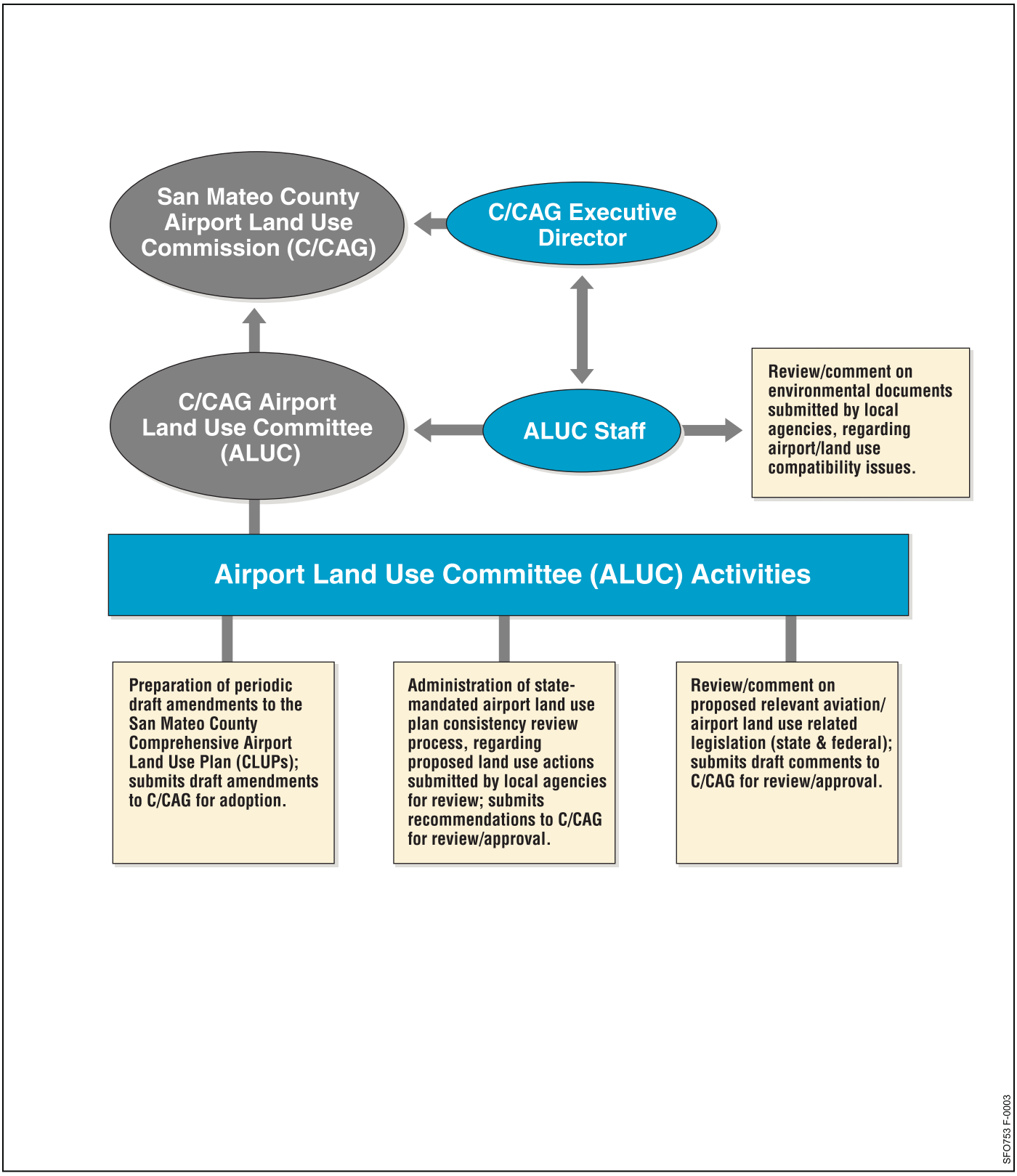

Exhibit I-2

OVERVIEW OF C/CAG AIRPORT LAND USE COMMITTEE (ALUC) ACTIVITIES

Comprehensive Airport Land Use Plan
for the Environs of San Francisco International Airport

C/CAG

City/County Association of Governments
of San Mateo County, California

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1.4 Authority of the C/CAG Board of Directors as the San Mateo County Airport Land Use Commission

1.4.1 PURPOSE OF THE LAW AND LIMITATIONS

The purpose of the airport land use commission statute (Public Utilities Code Section 21670, et seq.) is to:

- Protect public health, safety, and welfare through the adoption of land use standards that minimize the public's exposure to safety hazards and excessive levels of aircraft noise.
- Prevent the encroachment of incompatible land uses around public-use airports, thereby preserving the utility of those airports into the future.

Airport land use commission law does not give a commission jurisdiction over the operation of any airport. A commission has no authority over such things as the number of aircraft that can be based at an airport, the number of operations (landings or take-offs) that can occur, the flight patterns that aircraft use, the amount of noise that aircraft make, or the hours of the day during which aircraft can operate at an airport.

1.4.2 DUTIES OF THE C/CAG BOARD OF DIRECTORS AS THE AIRPORT LAND USE COMMISSION

Under the provisions of state law, the C/CAG Board of Directors, acting as the Airport Land Use Commission for San Mateo County, has certain responsibilities and specific duties to perform. The Board fulfills its responsibilities in three basic ways:

- Adoption of ~~a CLUP~~an ALUCP for the environs of each airport in the county that contains airport/land use compatibility policies, standards, and criteria addressing height, noise, and safety issues.
- Coordination with local agencies (affected cities and the County of San Mateo) with jurisdiction over any geographic area subject to the provisions of the relevant ~~CLUP~~ALUCP to help them implement airport-compatible land use planning, as part of their local land use and zoning authority.
- Review and determination of the compatibility of proposed local agency land use policy actions, such as general plans and general plan amendments, specific plans and specific plan amendments, and rezonings (resulting in a land use change) near any public use airport in the county, with the applicable policies, standards, and criteria contained in the relevant ~~CLUP~~ALUCP.

1.5 Comprehensive Airport Land Use Compatibility Plan (~~CLUP~~ALUCP): Need and Purpose

1.5.1 NEED FOR ~~CLUP~~ALUCP

Airports serve many desirable purposes, including important roles in both transportation and economic development. Noise, air pollution, and ground traffic congestion associated with airport and aircraft operations can affect surrounding

land uses, particularly in densely urbanized areas. At the same time, land uses in the airport vicinity can pose challenges for safe and efficient airport operations if they create visibility problems or airspace obstructions.

The introduction of turbojet aircraft in the late 1950s, accompanied by a rapid increase in air traffic, created severe noise impacts in communities near major airports. These impacts continue to adversely affect people who live near airports. Some progress has been made toward reducing aircraft noise impacts by rerouting aircraft, modifying aircraft operating procedures, and by airlines acquiring new, quieter aircraft. These measures, however, have been only partially effective. Airport and aircraft operations continue to have significant noise impacts on surrounding lands.

Another concern is safety in the areas surrounding airports. The concentration of aircraft flights over particular areas increases the potential risk of aircraft accidents in those areas. Obstructions and hazards in the airspace, such as tall structures, birds, smoke, or electromagnetic radiation, can impede safe air navigation, potentially increasing the risk of aircraft accidents. Therefore, comprehensive land use planning for areas surrounding an airport is vitally important to reduce the risk of aircraft accidents and to reduce the potential harmful consequences of accidents.

An effective ~~CLUP~~ALUCP provides a framework for local land use regulatory agencies and airport land use commissions to coordinate land use planning to minimize impacts, especially aircraft noise and safety impacts, in the airport environs. An effective ~~CLUP~~ALUCP also ensures that new uses in the airport vicinity do not negatively affect the safe and efficient operation of the airport.

1.5.2 PURPOSE OF ~~CLUP~~ALUCP

~~CLUP~~ALUCPs are the fundamental tools used by airport land use commissions to fulfill their purpose of promoting airport/land use compatibility. The law describes the purpose of these plans in essentially the same terms it uses with respect to the purpose of the commissions themselves. Specifically, ~~CLUP~~ALUCPs have two purposes:

- To "provide for the orderly growth of each public [and military] airport and the area surrounding the airport within the jurisdiction of the commission."
- To "safeguard the general welfare of the inhabitants within the vicinity of the airport and the public in general."

The ~~CLUP~~ALUCP for the environs of SFO is the key to implementation of the Airport Land Use Commission (the C/CAG Board) policies related to proposed land development in the vicinity of the Airport. It provides the standards, criteria, and policies on which the compatibility of proposed local agency land use policy actions are determined. It also establishes the planning boundaries around SFO that define height/airspace protection, noise, and safety areas for policy implementation, and areas within which notification of SFO proximity is required as part of real estate transactions.

1.6 Scope of the Plan

This document is a comprehensive update of the 1996 ~~CLUP~~ Airport Land Use Compatibility Plan (known at that time as a CLUP) for SFO, which was based on the 1986-2006 Airport Master Plan.[10] The 1996 CLUP also incorporated the 1983 Noise Exposure Map as the basis for noise compatibility policy. Airport plans and noise contour maps have been updated since that time and are reflected in this updated ~~CLUP~~ALUCP. The SFO ~~CLUP~~ALUCP applies to geographic areas in various cities and unincorporated areas in San Mateo County that are located within the Airport Influence Area (AIA) boundary established and defined in Chapter 4 of this ~~CLUP~~ALUCP. This ~~CLUP~~ALUCP has been prepared with reference to and is consistent with the guidance provided by the Department of Transportation, Division of Aeronautics in the latest version of the *California Airport Land Use Planning Handbook*.[11]

1.6.1 PLANNING ASSUMPTIONS

The updated ~~CLUP~~ALUCP is based on three sets of key planning assumptions: (1) the updated Airport Layout Plan (ALP); (2) updated aviation activity forecasts; and (3) updated noise exposure forecasts.

State law requires that airport land use commissions base their ~~CLUP~~ALUCPs on up-to-date airport master plans or ALPs (Pub. Util. Code §21675(a)). The updated ~~CLUP~~ALUCP for SFO is based on the most recent future ALP for the Airport. The ALP reflects planned enhancements to the Runway Safety Areas (RSA) for Runways 10L-28R, 10R-28L, 1R-19L, and 1L-19R to improve safety. The San Francisco Airport Commission will implement the RSA Program to comply with Public Law 109-115, which states that "not later than December 31, 2015, the owner or operator of an airport certificated under 49 United States Code 44706 shall improve the airport's RSAs to comply with the Federal Aviation Administration (FAA) design standards required by 14 Code of Federal Regulations Part 139" (Public Law 109-115, November 30, 2005 [119 STAT. 2401]). The RSA enhancements will result in shifts in the runway ends.

The updated ~~CLUP~~ALUCP also relies on the latest comprehensive aviation activity forecasts prepared for SFO, which forecast airport operations through the year 2028.[12]

As part of the environmental assessment and environmental impact report for the proposed RSA Program, SFO prepared updated noise contour maps for forecasted conditions in 2015 and 2020.[13] The 2020 forecast contours define the boundaries within which the noise compatibility policies of this ~~CLUP~~ALUCP are based.

1.6.2 MAJOR CONCERNS

The SFO ~~CLUP~~ALUCP has four primary areas of concern:

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[10] City/County Association of Governments of San Mateo County, *San Mateo County Comprehensive Airport Land Use Plan*, December 1996.

[11] California Department of Transportation, Division of Aeronautics, *California Airport Land Use Planning Handbook*, October 2011.

[12] Jacobs Consultancy, Technical Memorandum – Aviation Demand Forecasts, San Francisco International Airport, February 2010.

[13] URS Corporation, *Draft Environmental Assessment, San Francisco International Airport Proposed Runway Safety Area Program*, June 2011.

- Aircraft Noise Impact Reduction – To reduce the potential number of future airport area residents who could be exposed to noise impacts from airport and aircraft operations.
- Safety of Persons on the Ground and in Aircraft in Flight – To minimize the potential number of future residents and land use occupants exposed to hazards related to aircraft operations and accidents.
- Height Restrictions/Airspace Protection – To protect the navigable airspace around the Airport for the safe and efficient operation of aircraft in flight.
- Overflight Notification – To establish an area within which aircraft flights to and from the Airport occur frequently enough and at a low enough altitude to be noticeable by sensitive residents. Within this area, real estate disclosure notices shall be required, pursuant to State law.

The airport/land use compatibility policies and criteria contained in this ~~CLUP~~ALUCP apply only to new development. Under State law, the Airport Land Use Commission (the C/CAG Board) has no jurisdiction over existing development unless it is expanded or enlarged significantly, in which case it is treated as infill development subject to the policies in this document. The policies and criteria contained in this ~~CLUP~~ALUCP are intended to help achieve compatibility of proposed land use development or proposed airport-area development with San Francisco International Airport and aircraft operations.

Airport influence area boundaries define areas where height, noise, overflight and safety standards, policies, and criteria are applied to certain proposed land use policy actions. Comprehensive planning in these areas, reflected in land use policies, standards, and criteria, is designed to minimize the exposure of the public to noise and safety hazards, to provide for safer aircraft operations, to help protect the airport from encroachment by incompatible land development, and to ensure notification of prospective buyers of real estate of the presence of the Airport and aircraft overflights.

This ~~CLUP~~ALUCP establishes a two-tier Airport Influence Area (AIA) around SFO and identifies land uses that are compatible with airport and aircraft operations within different compatibility zones in the AIA. This ~~CLUP~~ALUCP provides a basis for determining the compatibility of proposed land use actions with the relevant land use compatibility provisions.

To support the policies that directly address the areas of concern listed above, this ~~CLUP~~ALUCP also includes policies related to planning and communication protocols among C/CAG, the Airport, and local governmental agencies.

1.6.3 LIMITATIONS OF THE PLAN

Not a Specific Development Plan

This ~~CLUP~~ALUCP is not a specific development plan. It sets forth no specific land uses for any particular parcel or parcels of land.

No Authority Over Airport Operations

The Airport Land Use Commission (the C/CAG Board) has no authority over Airport operations (Pub. Util. Code, Section 21674(e)). Nothing in this ~~CLUP~~ALUCP shall be interpreted as regulating or conveying any recommendations concerning aircraft operations to/from/at the Airport.

Status of Existing Incompatible Development

While this ~~CLUP~~ALUCP provides a guide to promote compatible land uses near SFO, considerable development already exists in the Airport environs that is inconsistent with the compatibility policies and guidelines contained in this ~~CLUP~~ALUCP. The land use compatibility policies and criteria contained in this document are intended to promote compatible land development in the vicinity of SFO. They are not intended to remove existing incompatible uses. ***None of the compatibility criteria contained herein are retroactive to existing land uses***.

Incompatible development that currently exists is recognized as existing nonconforming land use by the Airport Land Use Commission (the C/CAG Board). Although this nonconforming land use is recognized, neither this ~~CLUP~~ALUCP nor the Airport Land Use Commission (the C/CAG Board), finds these uses to be consistent with this ~~CLUP~~ALUCP.

Existing Land Uses

In addition to land uses that are currently developed and in use, "existing land uses" shall also include vested development projects that have not yet been built if one or more of the following conditions is satisfied:

- A vesting tentative map has been approved pursuant to California Government Code, Section 66498.1, and has not expired as of the effective date of this ~~CLUP~~ALUCP; or
- A development agreement has been executed pursuant to California Government Code, Section 65866, and remains in effect as of the effective date of this ~~CLUP~~ALUCP; or
- As of the effective date of this ~~CLUP~~ALUCP, a valid building permit has been issued, substantial work has been performed, and substantial liabilities have been incurred in good faith reliance on the permit, pursuant to the California Supreme Court decision in Avco Community Developers, Inc. v. South Coast Regional Com. (1976) 17 Cal.3d 785,791, and its progeny.

1.7 Amendment of the ~~CLUP~~ALUCP

1.7.1 PLAN AMENDMENTS

The airport land use commission statute (Pub. Util. Code, Section 21675 (a)) limits amendments to ~~a CLUP~~an ALUCP to not more than once per calendar year. The San Mateo County Airport Land Use Commission (the C/CAG Board) has delegated the preparation of draft amendments of the ~~CLUP~~ALUCP to the C/CAG ALUC. The ALUC initiates this process when necessary and feasible. ALUC staff or consultants prepare draft amendment documents for review by the ALUC, affected agencies, and the public. The content and scope of the amendments are guided by the relevant provisions of the latest edition of *Airport Land Use Planning Handbook,* published by the Caltrans Division of Aeronautics (Pub. Util. Code, Section 21674.7).

Upon completion of a draft amendment document, the ALUC refers the document to the Airport Land Use Commission (the C/CAG Board) for review and adoption. The C/CAG Joint Powers Agreement requires a countywide plan, or an amendment of a countywide plan, to be introduced at a C/CAG Board meeting prior to final action on the plan or plan amendment at a subsequent C/CAG Board meeting. Therefore, it takes at least two C/CAG

Board meetings to adopt an amendment to the ~~CLUP~~ALUCP. The second meeting includes a public hearing to receive public input prior to final action on the amendment.

1.7.2 ENVIRONMENTAL REVIEW

Requirements for the preparation of California Environmental Quality Act (CEQA) documentation when adopting or amending ~~a CLUP~~an ALUCP are not mentioned in the airport land use commission statutes. A decision reached by the California Supreme Court in 2007 clarified the application of CEQA to airport land use compatibility plans (*Muzzy Ranch Co. v. Solano County Airport Land Use Commission*, 41 Cal. 4th 372, June 21, 2007, modified September 12, 2007). The court ruled that ~~a CLUP~~an ALUCP is a "project" subject to environmental review under CEQA. The court explained that even if subsequent action by a local land use regulatory agency is required before development projects can be authorized, ~~a CLUP~~an ALUCP "carries significant, binding regulatory consequences for local government…" The court noted that even if ~~a CLUP~~an ALUCP would not cause a direct physical change in the environment, it still might affect the environment indirectly. The court specifically discussed the possibility that adoption of land use restrictions in the vicinity of an airport could cause development that would have occurred in the airport area to shift elsewhere, potentially giving rise to an adverse effect on the environment.

Nevertheless, the court also explained that the "common sense" exemption from CEQA may be invoked by an airport land use commission "[w]here it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment …."[14] The CEQA exemption may be used, however, only when the specific facts in question reveal that use of the exemption is justified.

It has been the practice of the San Mateo County Airport Land Use Commission (the C/CAG Board) to prepare an Initial Study and a Negative Declaration, per CEQA requirements, when adopting an amendment to the ~~CLUP~~ALUCP. The rationale for concluding that no significant environmental impacts would result from an amendment to the ~~CLUP~~ALUCP has been that the ~~CLUP~~ALUCP is intended to reduce environmental impacts in an airport area through relevant policy implementation.

[14] CEQA Guidelines, Section 15061(b)(3).

II SAN FRANCISCO INTERNATIONAL AIRPORT AND ENVIRONS

2.1 Introduction

This chapter provides background information about the Airport and the neighboring communities, covering the following topics:

- The study area, existing land use, development trends, and the local planning policies relating to airport compatibility
- Forecasts, aircraft operating procedures, and future development plans at SFO

2.2 Existing and Planning Land Use in the Airport Environs

Exhibit II-1 depicts the overall study area for the SFO ~~CLUP~~ALUCP. It extends from Redwood City on the southeast across the peninsula to the Pacific Ocean at Daly City on the northwest. Approximately half of the area is in San Francisco Bay. The size of the study area is sufficient to contain the critical airspace surfaces, the airport noise contours, and major flight track corridors that are to be used as criteria for airport compatibility planning and related policy implementation.

2.2.1 EXISTING LAND USE

Exhibit II-2 depicts generalized existing land use in the core of the study area, focusing on communities closer to the Airport. Most of the land is developed for urban uses, except for mountainous areas that are dedicated to open space and park uses. Only small areas of vacant land suitable for development remain in the area.

There is a variety of land uses in the area, including heavy industrial, business/technology parks, institutional, commercial, multi-family residential, single-family residential, and park and recreational uses. Steep slopes are in parts of the study area, most of which are currently developed in low-density single-family residential uses. Major transportation corridors traverse the area, including several major freeways, the BART rail line, and the Caltrain commuter rail line. (Some of these are also major sources of noise.) Some transit stations are located directly along the extended centerlines of both sets of parallel runways.

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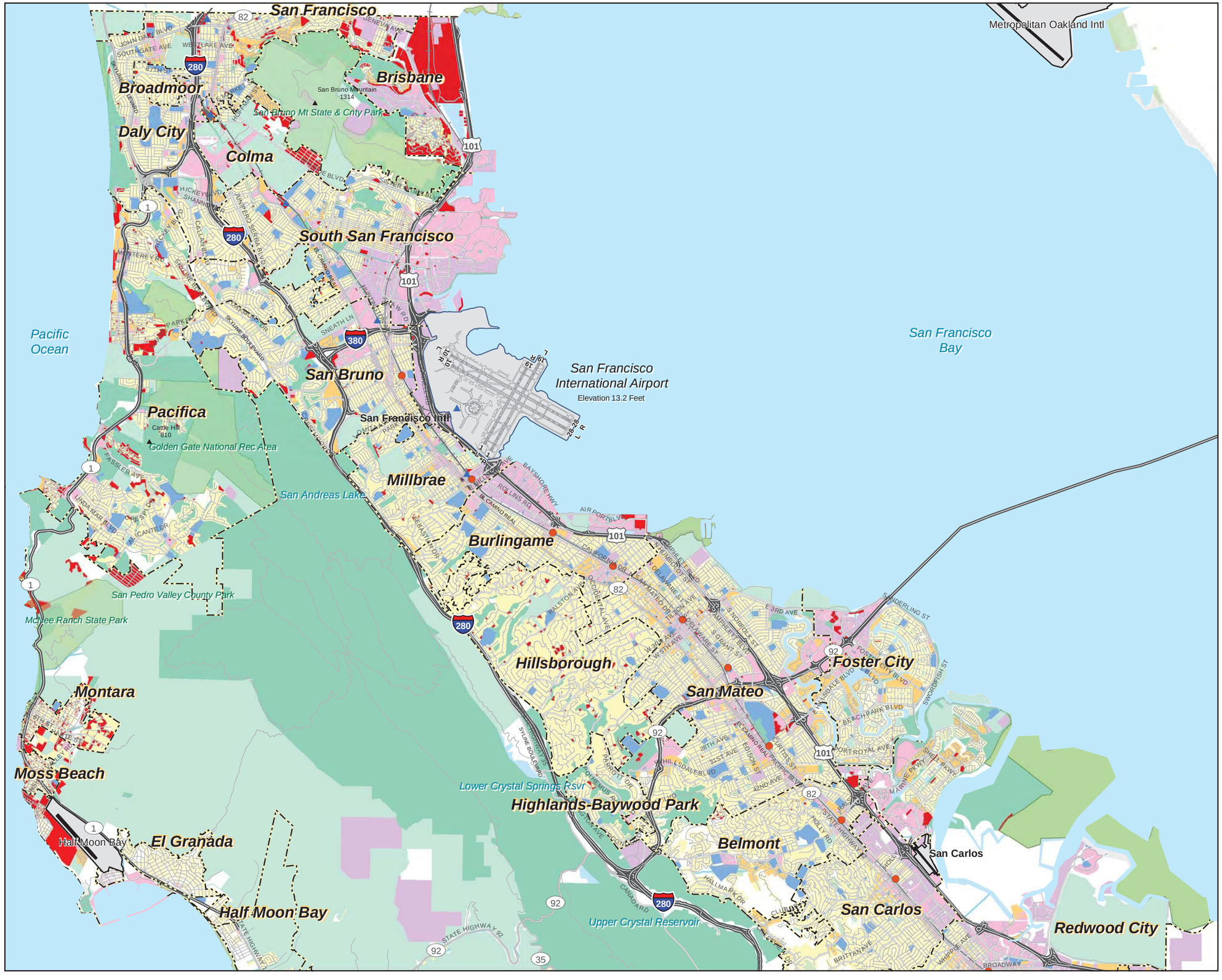

LEGEND

- BART Stations
- CALTRAIN Stations
- Municipal Boundary
- Railroads
- Freeways
- Roads

Generalized Existing Land Use 2007:

- Vacant
- Public
- Multi-Family Residential
- Single Family Residential
- Mixed Use
- Commercial
- Industrial, Transportation, and Utilities
- Local Park, Golf Course, Cemetery
- Regional Park or Recreation Area
- Open Space

Source:

San Mateo County Planning & Building Department 2007

NORTH

0 0.4 0.8 1.6 Miles

Exhibit II-1

STUDY AREA AND JURISDICTIONAL BOUNDARIES
Comprehensive Airport Land Use Plan
for the Environs of San Francisco International Airport

C/CAG
City/County Association of Governments
of San Mateo County, California

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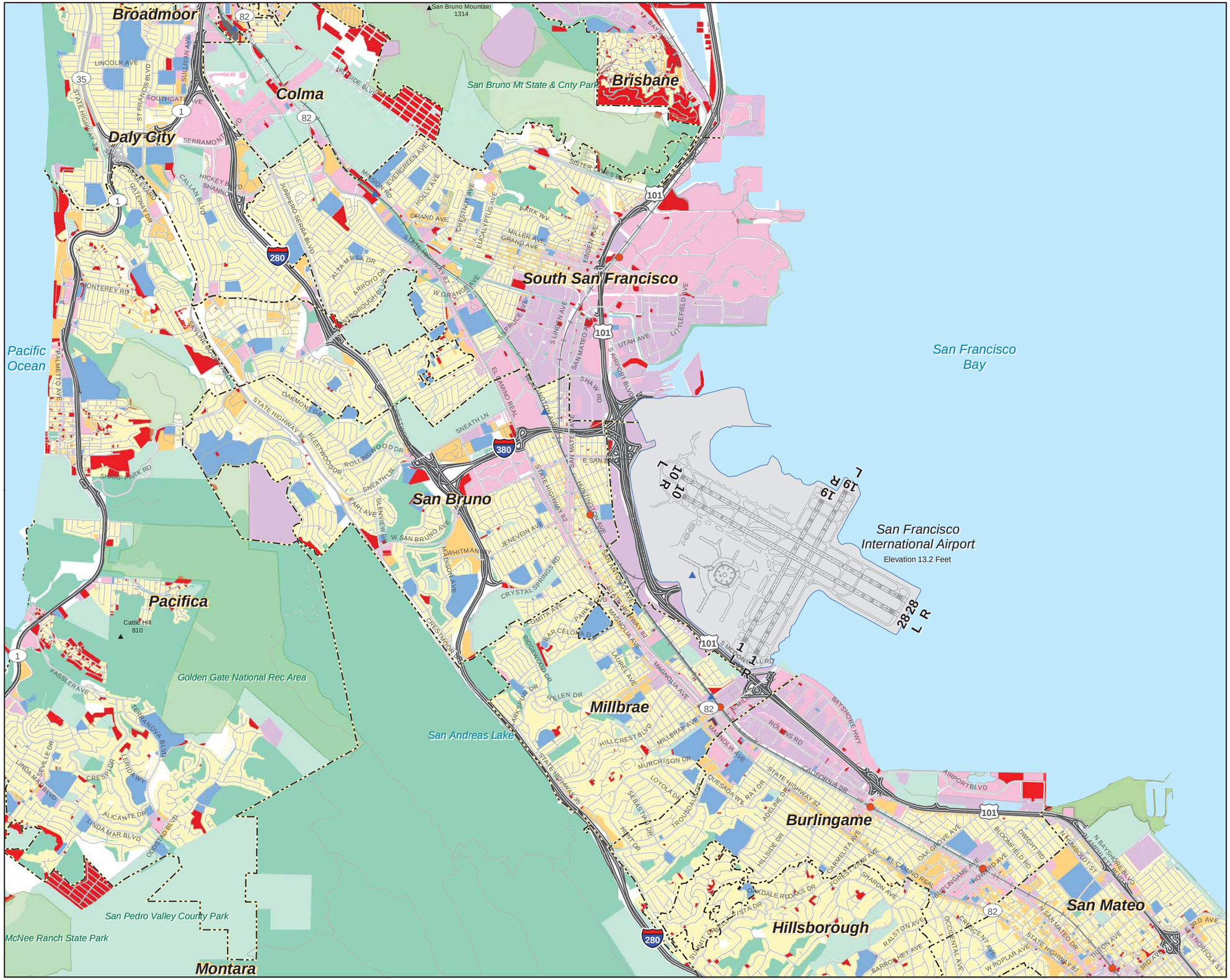

LEGEND

- BART Stations
- CALTRAIN Stations
- Municipal Boundary
- Railroads
- Freeways
- Roads

Generalized Existing Land Use 2007:

- Vacant
- Public
- Multi-Family Residential
- Single Family Residential
- Mixed Use
- Commercial
- Industrial, Transportation, and Utilities
- Local Park, Golf Course, Cemetery
- Regional Park or Recreation Area
- Open Space

Source:

San Mateo County Planning & Building Department 2007

NORTH

0 0.25 0.5 1 Miles

Exhibit II-2

GENERALIZED EXISTING LAND USE - 2007

Comprehensive Airport Land Use Plan
for the Environs of San Francisco International Airport

C/CAG

City/County Association of Governments
of San Mateo County, California

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Most of the land along U.S. 101 is developed for industrial, transportation, communications, and utility uses, including a large area north of the Airport in South San Francisco. Commercial development is scattered through the area, although it tends to be concentrated along major thoroughfares.

Residential neighborhoods are located north, west, and south of SFO. These include areas off the west end of Runways 10L and 10R and south of Runways 1L and 1R.

2.2.2 LOCAL MUNICIPALITIES

As indicated in Exhibit II-2, the following municipalities lie at least partly within the study area: Brisbane, Burlingame, Daly City, Foster City, Hillsborough, Millbrae, Pacifica, Redwood City, San Bruno, San Mateo, South San Francisco, and portions of unincorporated San Mateo County. As indicated in Chapter 4, parts of the following jurisdictions are within the Airport Influence Area B:

- Daly City
- Burlingame
- Millbrae
- San Bruno
- South San Francisco
- Unincorporated San Mateo County

2.2.3 LOCAL PLANNING

Exhibit II-3 depicts the generalized future land use pattern in the study area, based on the general plans and specific plans of the municipalities in the core of the study area.

Most of the six jurisdictions where land use is most affected by airport operations have adopted general plans and specific plans that are sensitive to airport compatibility considerations.[1] Many also have zoning standards restricting certain uses or limiting height that help to implement the intent of the plans with respect to airport compatibility. Several require airport noise real estate disclosure notifications within city limits. Some jurisdictions identify areas near the Airport and/or in areas with a history of noise complaints and noise impacts as potential sites for redevelopment, including new housing to meet Regional Housing Needs Assessment (RHNA) requirements. Burlingame, Millbrae, and San Bruno have prepared transit-oriented development (TOD) plans for the areas near the transit stations, including those directly off the ends of both sets of parallel runways. The TOD plans encourage "smart growth" objectives such as increased housing and employment densities near transit stations to support the use of transit as well as the fulfillment of objectives related to the reduction of road traffic congestion and the improvement of air quality.

[1] The jurisdictions include South San Francisco, San Bruno, Millbrae, Burlingame, Daly City, and San Mateo County.

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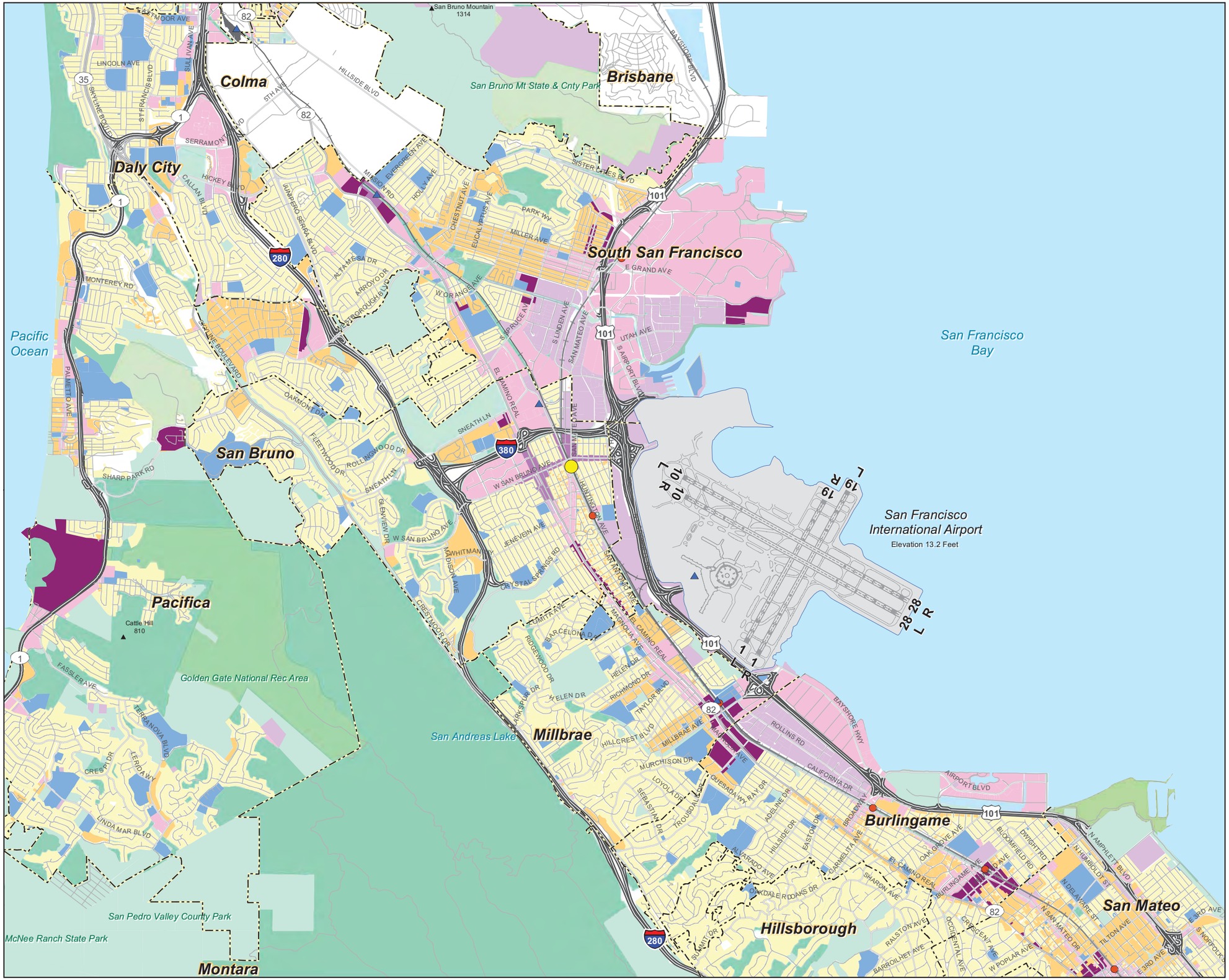

LEGEND

- Existing BART Stations
- Existing CALTRAIN Stations
- Proposed Relocated CALTRAIN Station
- Municipal Boundary
- Railroads
- Freeways
- Roads

Planned Land Use Per General Plans:

- Public
- Multi-Family Residential
- Single Family Residential
- Mixed Use
- Transit Oriented Development
- Commercial
- Industrial, Transportation, and Utilities
- Local Park, Golf Course, Cemetery
- Regional Park or Recreation Area
- Open Space
- Planned use not mapped

Sources:

County Base Maps:
- San Mateo County Planning & Building Department, 2007

Local Plans:
- Burlingame Bayfront Specific Area Plan, August 2006
- Burlingame Downtown Specific Plan, January 2009
- Burlingame General Map, September 1984
- North Burlingame/ Rollins Road Specific Plan, February 2007
- Colma Municipal Code Zoning Maps, December 2003
- Daly City General Plan Land Use Map, 1987
- Hillsborough General Plan, March 2005
- Millbrae Land Use Plan, November 1998
- Pacifica General Plan, August 1996
- San Bruno General Plan, March 2009
- San Mateo City Land Use Plan, March 2007
- San Mateo County Zoning Map, 1992
- South San Francisco General Plan, 1998

Exhibit II-3

GENERALIZED FUTURE LAND USE DESIGNATIONS PER LOCAL GENERAL AND SPECIFIC PLANS

Comprehensive Airport Land Use Plan
for the Environs of San Francisco International Airport

C/CAG

City/County Association of Governments
of San Mateo County, California

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2.2.4 LOCAL NOISE COMPATIBILITY REGULATIONS AND GUIDANCE

Many local governments in the SFO vicinity have adopted standards to manage noise/land use compatibility. In addition to airport noise, many are exposed to and are addressing other noise sources, such as freeways. In some communities, airport noise is less than CNEL 65 decibels (dB), but is still a concern.[2] Portions of Burlingame, Hillsborough, Millbrae, and Foster City are outside the Airport's CNEL 65 dB contour, but some portions of these cities experience higher noise levels when runway use and flight routes differ from typical patterns utilized in prevailing wind conditions.

Many of the municipalities in the study area have adopted noise insulation standards that apply citywide. Some exceed the state housing law requirement by extending the insulation requirement to new single-family homes.[3] For example, San Bruno requires insulation to FAA guidelines for all new residential uses in areas within the Airport's CNEL 65 dB aircraft noise contour.[4] Daly City and South San Francisco require insulation to state standards for all new homes within the Airport's CNEL 65 dB aircraft noise contour.

Other local ordinances and measures have been adopted as part of the SFO Noise Abatement Program Memorandum of Understanding (MOU). In exchange for funding assistance to implement the sound insulation program (discussed in Section 2.3.6), local government signatories to the MOU agreed to promote real estate disclosure for all residential properties within the Airport's CNEL 65 dB aircraft noise contour and in proximity to the airport. The local governments also agreed to prohibit construction of new housing in the Airport's CNEL 70 dB aircraft noise contour and promised not to bring litigation against the Airport for noise impacts. Parties to the agreement include the Airport operator (City and County of San Francisco), San Mateo County, and the cities of Daly City, Millbrae, Pacifica, San Bruno, and South San Francisco. In each of these municipalities, the owners of all homes in the Airport's CNEL 70 dB and CNEL 65 dB aircraft noise contours have been offered sound insulation. The vast majority of homeowners have accepted the offer and have had their homes insulated.

2.2.5 DEVELOPMENT PRESSURES

Within the study area, most of the local jurisdictions are experiencing growing redevelopment and densification pressure. Forces behind these pressures include:

- The desirability of the area and proximity of the Airport has attracted a number of biotech companies that have helped to revitalize some of the older industrial areas. This, in turn, is attracting residents to the area. Close proximity of housing and jobs is strongly encouraged in modern planning theory such as smart growth.

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2 CNEL (Community Noise Equivalent Level) is a 24-hour cumulative noise metric. It is calculated by summing all noise over a 24-hour period, with extra weights of 4.8 dB assigned to noise between 7:00 pm and 10:00 pm and 10 dB to noise between 10:00 pm and 7:00 am. The sum is integrated over the number of seconds during the day to yield the CNEL value.

3 The California Building Code establishes a maximum acceptable interior noise level, from exterior sources, of CNEL 45 dB for residential structures. For residential structures exposed to aircraft noise above CNEL 60 dB, an acoustical analysis is required to demonstrate compliance with this requirement (Title 24, Part 2, Section 1207.11). Residential structures are defined to include "hotels, motels, dormitories, apartment houses, and dwellings other than detached single-family dwellings" (Section 1207.1).

4 FAA guidance advises an exterior to interior noise level reduction (NLR) of 25 dB for all residential uses in areas exposed to noise between CNEL 65 and 70 dB and a 30 dB NLR between CNEL 70 and 75 dB (14 CFR Part 150, Appendix A, Table 1). FAA guidance is generally comparable to the California Building Code requirement except that FAA guidance also extends to detached single-family dwellings.

- The Regional Housing Needs Assessment (RHNA) housing allocations require each local jurisdiction to accommodate a portion of the new housing needed for the growing population. Local jurisdictions must update their general plan housing elements to identify potential sites for new housing. Many jurisdictions, following smart growth principles, seek to locate additional residential units in existing neighborhoods that are close to commercial uses, services, and transportation. Some of the candidate locations are, however, within the Airport safety zones where residential densification is not recommended per the Caltrans *Airport Land Use Planning Handbook*. (See Section E.3 of **Appendix E** for a description of the Caltrans safety area guidance.)
- Modifications to the BART and Caltrain station areas that are expected to improve service and ridership represent a large public investment in transit. There is a desire and need for transit-oriented development (TOD) and redevelopment near the stations to make the most of the public investment. TOD also helps meet other regional and smart growth goals such as the reduction of vehicle miles traveled and improved air quality.
- There is a need to revitalize aging commercial corridors to upgrade older structures and to keep pace with modern retail formats and consumer expectations. Local jurisdictions desire to promote development within urbanized areas instead of in greenfield areas.
- A state requirement that hospitals meet seismic standards has led to the need to retrofit and redevelop at least one hospital in the area.

In addition, the passenger and business activity at the Airport itself creates local market forces encouraging certain kinds of development, such as hotels and professional services offices. In an already dense and complex urban environment, these needs and trends are typically accommodated through infill and redevelopment that intensifies land uses near the Airport and under the established flight paths. Much of modern land use planning practice and theory supports such intensification, but it must be balanced against the state's charge to ALUCs to protect airport environs from increasing land use incompatibilities. The policies of this ~~CLUP~~ALUCP have been developed to acknowledge these competing concerns within the SFO environs while protecting Airport operations.

2.2.6 SPECIAL DISTRICTS, SCHOOL DISTRICTS, AND COMMUNITY COLLEGE DISTRICTS

As described in California Public Utilities Code, Section 21670(f), "special districts are included among the local agencies that are subject to airport land use laws and other requirements of this article."

2.2.6.1 Special Districts

A special district is a separate local government that delivers a specific public service (or a limited number of services) to a geographically limited area. Special districts only serve in specifically defined areas; most provide only a single service, allowing them to concentrate on one activity. Special districts localize the costs and benefits of public services, allowing for residents to acquire the services they are willing to pay for.

Residents and landowners can form a special district to pay for new services or higher levels of existing services such as sewage treatment, electricity, fire protection, irrigation, cemeteries, animal control, mosquito abatement, and community services. Special districts can deliver a variety of public services, excluding education, which is under the purview of school districts. School districts get most of their money from the state government whereas special

districts rely mostly on local revenues.[5]

Although most special districts operate within one county, some district boundaries cross over city and county lines. Each county has a state-mandated Local Agency Formation Commission (LAFCO) that is responsible for forming and disbanding special districts.

Special districts located within Area B of the Airport Influence Area (AIA), defined in Chapter 4 of the ~~CLUP~~ALUCP as the land within the boundary defined by the CNEL 65 dB contour and the FAR Part 77 conical surface, are subject to the land use compatibility policies of this ~~CLUP~~ALUCP. The following special districts are located within Area B of the SFO AIA, as depicted on **Exhibit II-4**:

- North San Mateo County Sanitation District – The North San Mateo County Sanitation District serves Daly City and parts of Westborough. The District also maintains the Westborough County Water District's sewer system. The southeast corner of the North San Mateo County Sanitation District is located within Area B of the AIA.
- Peninsula Health Care District – Established in 1947, the Peninsula Health Care District responds to local health needs, allocating resources for programs that enhance the health of the District's residents. The District is the lessor of Peninsula Medical Center.[6] The District office is located south of El Camino Real (Route 82) on Trousdale Avenue, less than one mile south of SFO.
- San Mateo County Flood Control District – The San Mateo County Flood Control District is a countywide special district created by State legislation to finance flood control projects. The legislation requires that a flood control zone is formed over an entire watershed, and a proposed funding source is determined before undertaking a flood control project. An election is required if a flood control zone is to be financed with property assessments or taxes. Two active flood control zones are located in Area B of the AIA:
  - Colma Creek Flood Control Zone – The Colma Creek Flood Control Zone was created in 1964 to construct flood control facilities in Colma Creek to alleviate flooding in South San Francisco. The plan to improve the Colma Creek Flood Control Channel was re-vitalized in the mid 1990's by the financing of improvements by the BART Airport Extension Project and a financial contribution from Caltrans for drainage improvements in El Camino Real in Colma and Daly City.[7]
  - San Bruno Creek Flood Control Zones 1 and 2 – The San Bruno Creek Flood Control Zone was established in 1967 to finance the construction of channel and culvert improvements in the lower reach of San Bruno Creek. The Zone finances the maintenance of the channels and contracts with the City of San Bruno for pump station maintenance.[8]

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5 California Senate Local Government Committee. "What's So Special About Special Districts? (Fourth Edition)," A Citizen's Guide to Special Districts in California, October 2010.

6 Peninsula Health Care District. "About Peninsula Health Care District," www.peninsulahealthcaredistrict.org/about.html (accessed January 26, 2012).

7 County of San Mateo, Department of Public Works. "Flood Control," www.co.sanmateo.ca.us/portal/site/publicworks/ (accessed January 26, 2012).

8 County of San Mateo, Department of Public Works. "Flood Control," www.co.sanmateo.ca.us/portal/site/publicworks/ (accessed January 26, 2012).

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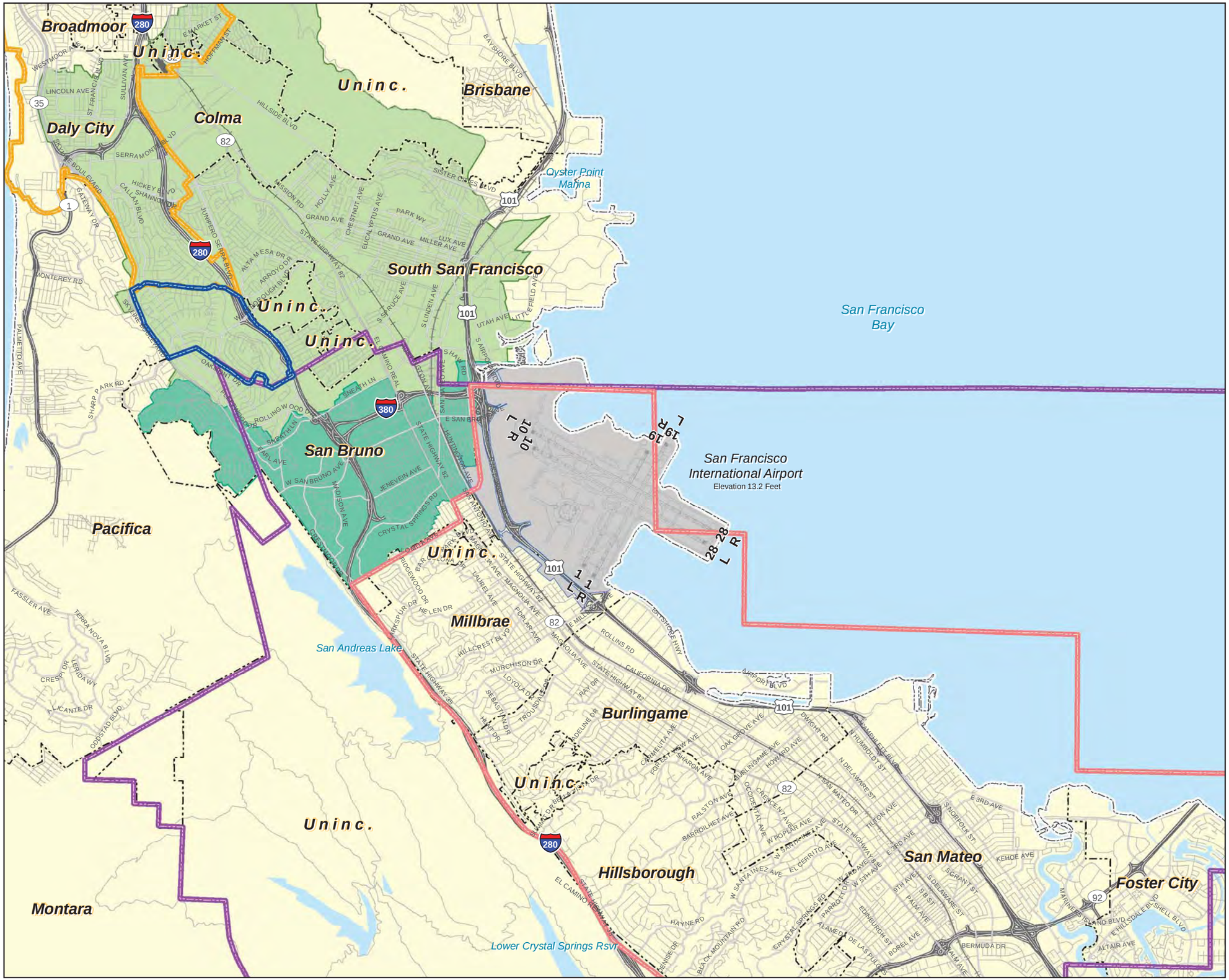

LEGEND

- Airport Property
- Municipal Boundary
- Railroad
- Freeway
- Road

Special Districts

- North San Mateo County Sanitation District
- Peninsula Health Care District
- Westborough County Water District
- San Mateo County Mosquito Abatement District
- San Mateo County Harbor District*

San Mateo County Flood Control District*

a. Colma Creek Flood Control Zone
b. San Bruno Creek Flood Control Zones 1 & 2

Sources:

Special Districts:
- County of San Mateo, Local Agency Formation Commission (LAFCo). "Maps," www.co.sanmateo.ca.us/portal/site/lafco/ (accessed March 21, 2011).

County Base Maps:
- San Mateo County Planning & Building Department, 2007

*Boundaries of district are coterminous with San Mateo County boundary.

NORTH

0 0.3 0.6 1.2 Miles

Exhibit II-4
SPECIAL DISTRICTS
LOCATED IN AIRPORT INFLUENCE AREA B
Comprehensive Airport Land Use Plan
for the Environs of San Francisco International Airport

C/CAG
City/County Association of Governments
of San Mateo County, California

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- San Mateo County Harbor District – Created by a County election in 1933, the San Mateo County Harbor District manages Pillar Point Harbor in Princeton and Oyster Point Marina/Park in South San Francisco. The County of San Mateo established the entire area of the County of San Mateo as the District's boundaries. The Oyster Point Marina is located approximately 2.5 miles north of SFO and is owned by the City of South San Francisco. The marina is comprised of 600 berths, a boat dock, a fishing ramp, and a 300-foot pier; a park and a beach are also located adjacent to the marina.[9]
- San Mateo County Mosquito and Vector Control District – the San Mateo County Mosquito and Vector Control District is an independent special district that is guided by its own Board of Trustees. The mission of the District is "To safeguard the health and comfort of the citizens of San Mateo County through a planned program to monitor and reduce mosquitoes and other vectors."[10] The primary goals of the District are to:[11]
  - Prevent the emergence of biting adult mosquitoes by applying control to the larval stage;
  - Monitor adult mosquito populations to uncover new sites of larval development and assess the effectiveness of control;
  - Monitor the distribution of vector-borne diseases and prevent the occurrence of these diseases among district residents;
  - Evaluate new pesticides and methods of control for mosquitoes; and
  - Increase public awareness of District services with an active educational program.
- Westborough County Water District – The Westborough County Water District borders the northwestern edge of the AIA Area B boundary. Incorporated in 1961, the District supplies drinking water to approximately 12,000 customers. It purchases its entire water supply from the City and County of San Francisco Water Department. The district also provides sewer service through the North San Mateo County Sanitation District.

The office addresses, telephone numbers, and websites associated with these special districts are provided in **Table II-1**

2.2.6.2 School Districts and Community College Districts

Table II-2 identifies school districts that have boundaries within Area B of the SFO AIA. Additionally, the San Mateo County Community College District, a countywide district, is located within Area B of the SFO AIA. These school districts and the community college district are illustrated on **Exhibit II-5**.

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[9] San Mateo County Harbor District. "Welcome to the Harbor District," www.smharbor.com/harbordistrict/index.htm (accessed January 26, 2012).

[10] San Mateo County Mosquito and Vector Control District. "Mission and Goals," www.smcmad.org/mission_goals.htm (accessed January 26, 2012).

[11] San Mateo County Mosquito and Vector Control District. "Mission and Goals," www.smcmad.org/mission_goals.htm (accessed January 26, 2012).

Table II-1 Special Districts in SFO Environs

SCHOOL DISTRICT	OFFICE ADDRESS	TELEPHONE NUMBER	WEBSITE
North San Mateo County Sanitation District	333 90th Street Daly City, CA 94015-1895	(650) 991-8127	NA
Peninsula Health Care District	1600 Trousdale Drive Suite 1210 Burlingame, CA 94010	(650) 697-6900	www.peninsulahealthcaredistrict.org
San Mateo County Flood Control District	555 County Center 5th Floor Redwood City, CA 94063	(650) 363-4100	www.co.sanmateo.ca.us/portal/site/publicworks/
San Mateo County Harbor District	400 Oyster Point Blvd. Suite 300 South San Francisco, CA 94080	(650) 583-4611	www.smharbor.com
San Mateo County Mosquito & Vector Control District	1351 Rollins Road Burlingame, CA 94010	(650) 344-8592	www.smcmad.org
Westborough County Water District	2263 Westborough Blvd. South San Francisco, CA 94080	(650) 589-1435	www.westboroughwater.com/index.htm

SOURCE: Ricondo & Associates, Inc., November 2011.
PREPARED BY: Ricondo & Associates, Inc., February 2012.

Table II-2 School Districts and Community College District in SFO Environs

SCHOOL DISTRICT	OFFICE ADDRESS	TELEPHONE NUMBER	WEBSITE
Burlingame School District	1825 Trousdale Drive Burlingame, CA 94010-5704	(650) 259-3800	www.bsd.k12.ca.us
Hillsborough City Elementary School District	300 El Cerrito Avenue Hillsborough, CA 94010	(650) 342-5193	www.hcsd.k12.ca.us/Index.aspx?page=1
Jefferson Union High School District	699 Serramonte Blvd., #100 Daly City, California 94015	(650) 550-7900	www.juhsd.net/
Millbrae Elementary School District	555 Richmond Drive Millbrae, CA 94030	(650) 697-5693	www.millbraeschooldistrict.org
San Bruno Park Elementary School District	500 Acacia Avenue San Bruno, CA 94066-4298	(650) 624-3100	http://sbpsd.k12.ca.us
San Mateo County Community College District	3401 CSM Drive San Mateo, CA 94402	(650) 574-6550	www.smccd.edu/accounts/smccd/
San Mateo Foster City Elementary School District	1170 Chess Drive Foster City, CA 94404	(650) 312-7700	www.smfc.k12.ca.us/
San Mateo Union High School District	650 North Delaware Street San Mateo, CA 94401-1732	(650) 558-2299	www.smuhsd.org/
South San Francisco Unified School District	398 B Street South San Francisco, CA 94080	(650) 877-8700	www.ssfusd.k12.ca.us

SOURCE: Ricondo & Associates, Inc., November 2011.
PREPARED BY: Ricondo & Associates, Inc., February 2012.

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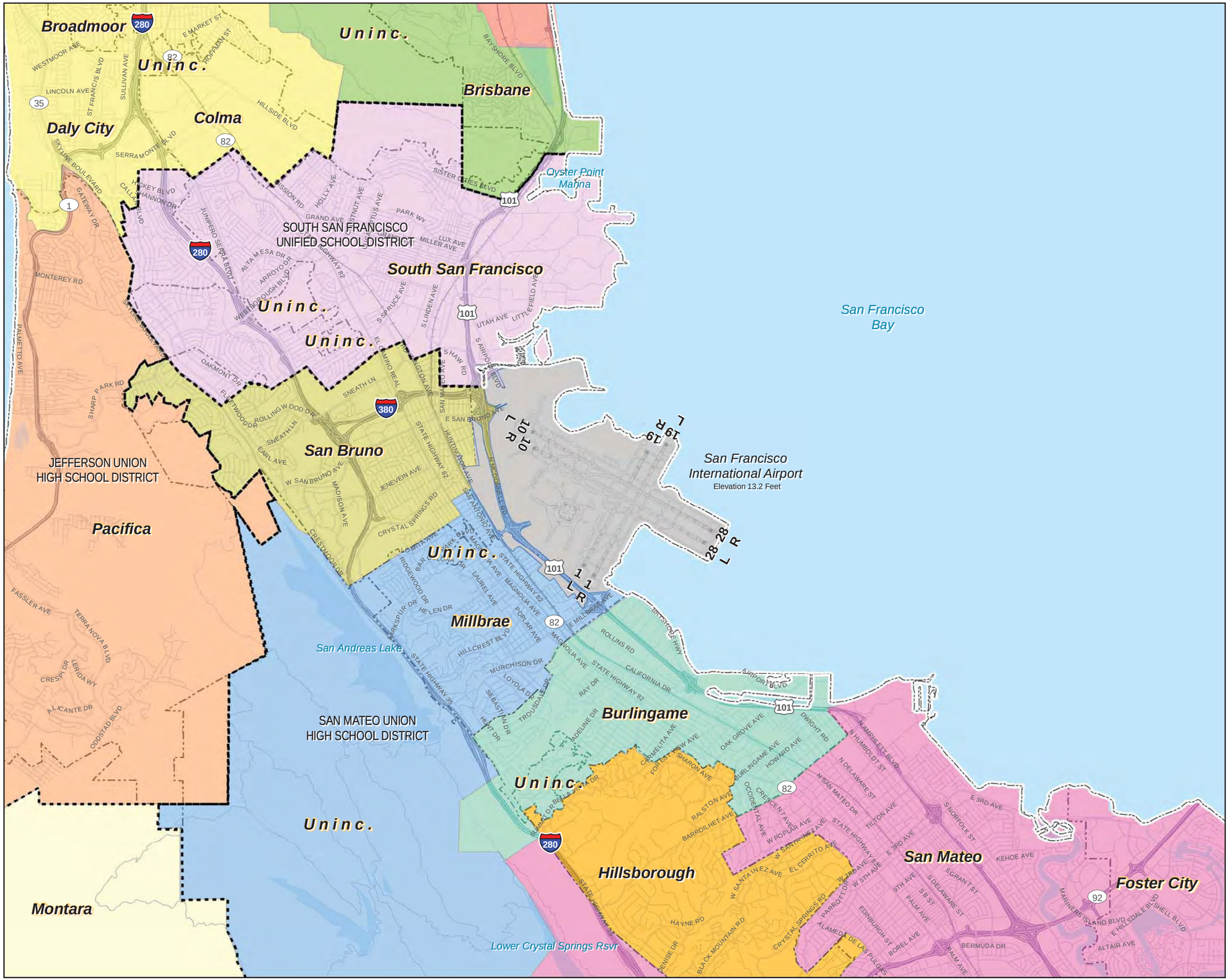

LEGEND

- Airport Property
- Municipal Boundary
- Railroad
- Freeway
- Road

School Districts

- High School Districts
- San Mateo County Community College District*

Elementary School Districts

- Jefferson Elementary School District
- Hillsborough City Elementary School District
- Millbrae Elementary School District
- San Mateo Foster City Elementary School District
- Bayshore Elementary School District
- Brisbane Elementary School District
- Burlingame Elementary School District
- Pacifica School District
- San Bruno Park Elementary School District
- South San Francisco Elementary School District

Sources:

School Districts:
- County of San Mateo. “State of California High School Districts,” 2008, www.smcoe.k12.ca.us/Superintendent/Documents/County_Map_High_SD.pdf (accessed March 21, 2011); County of San Mateo. “State of California School Districts,” 2008, www.smcoe.k12.ca.us/Superintendent/Documents/County_Map_Elem_SD.pdf (accessed March 21, 2011).

County Base Maps:
- San Mateo County Planning & Building Department, 2007

*Boundaries of district are coterminous with San Mateo County boundary.

NORTH

0 0.3 0.6 1.2 Miles

Exhibit II-5
SCHOOL AND COMMUNITY COLLEGE DISTRICTS LOCATED IN AIRPORT INFLUENCE AREA B
Comprehensive Airport Land Use Plan
for the Environs of San Francisco International Airport

C/CAG
City/County Association of Governments
of San Mateo County, California

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2.3 San Francisco International Airport

This ~~CLUP~~ALUCP is based on the recently updated Future ALP for SFO. The Future ALP reflects the planned enhancements to the RSA areas for Runways 10L-28R, 10R-28L, 1R-19L, and 1L-19R, as described in Chapter 1, Section 7. These RSA enhancements will result in short extensions to existing runways and adjustments in the runway thresholds. This chapter describes the physical and operations characteristics of SFO to provide a foundation for the airport/land use compatibility policies and criteria contained in the ~~CLUP~~ALUCP.

SFO is the primary air carrier airport in the San Francisco Bay area and the Northern California region. In 2009, approximately 18.2 million enplaned passengers (37.3 million annual passengers) used the Airport, making it the tenth busiest airport in the country and 20th busiest in the world based on passenger totals.[12]

The Airport is located approximately 14 miles south of downtown San Francisco in a mostly unincorporated area of San Mateo County. It lies along San Francisco Bay immediately east of U.S. Highway 101 (the Bayshore Freeway) and is adjacent to the cities of Burlingame, Millbrae, San Bruno, and South San Francisco.

Although SFO is located in San Mateo County, it is owned and operated by the City and County of San Francisco. It is administered by the San Francisco Airport Commission and the Airport Director. The Commission consists of five members appointed by the Mayor of San Francisco. (There is no County of San Mateo representation on the Airport Commission.)

2.3.1 EXISTING AND PLANNED AIRPORT FACILITIES

The Airport is located on 5,171 acres of property, of which 2,383 have been developed for airport use. The remaining 2,788 acres are undeveloped tidelands and wetlands.

The Airport Commission relies on the Master Plan and the Master Plan Environmental Impact Report (EIR) to implement development recommendations. The most recent version of the Airport Master Plan was approved in November 1992. Events since then have led to the delay of some projects identified in the Master Plan. These events include the terrorist attacks that took place on September 11, 2001, the Severe Acute Respiratory Syndrome (SARS) outbreak, and economic downturns. Although the Master Plan continues to provide the overall vision for Airport development, various details have been changed as a result of these events. The updated ALP, as depicted on **Exhibit II-6,** portrays development planned for the Airport and is the basis for this ~~CLUP~~ALUCP update.

None of the planned improvements for the Airport would significantly increase operational capacity, create more aircraft noise impacts, or lead to substantial changes in runway use or flight procedures.

[12] Airports Council International – North America, "Airport Traffic Reports," 2009, www.aci-na.org/stats/stats_traffic, (accessed February 2011).

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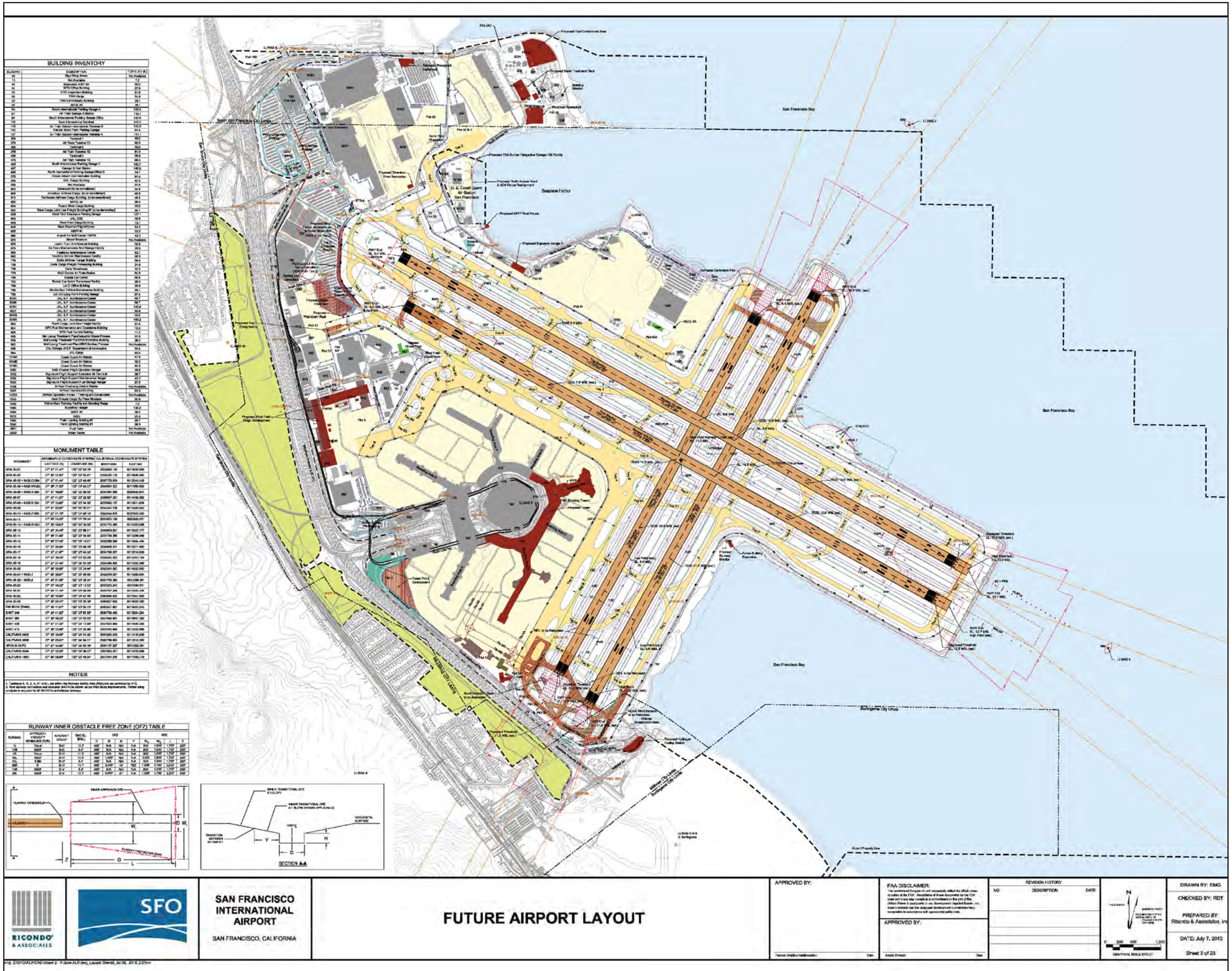

LEGEND

- RUNWAY PAVEMENT
- TAXIWAY PAVEMENT
- APRON PAVEMENT
- AIRPORT PROPERTY WEST OF BAYSHORE
- AIRPORT BUILDING
- SAN FRANCISCO BAY
- DETENTION BASIN
- AIRCRAFT RESCUE & FIRE FIGHTING (ARFF)
- NEW AIRSIDE DEVELOPMENTS
- NEW LANDSIDE DEVELOPMENTS
- FACILITY TO BE DEMOLISHED
- PAVEMENT TO BE DE-ACTIVATED
- NEW AIRFIELD PAVEMENT
- EMAS BED
- CITY LIMITS LINE
- AIRPORT PROPERTY LINE
- RPZ — RUNWAY PROTECTION ZONE
- RSA — RUNWAY SAFETY AREA
- OFA — OBJECT FREE AREA
- OFZ — OBSTACLE FREE ZONE
- BRL — BUILDING RESTRICTION LINE (BRL)
- TSS — THRESHOLD SITING SURFACE
- EXISTING AIR OPERATIONS AREA (AOA) FENCE
- FUTURE AIR OPERATIONS AREA (AOA) FENCE
- EXISTING LOCALIZER CRITICAL AREA
- RELOCATED LOCALIZER CRITICAL AREA
- RELOCATED GLIDE SLOPE CRITICAL AREA
- PARKING LOT BOUNDARY
- SEA WALL
- AIR TRAIN
- SFIA — MONUMENT
- WIND CONE
- INNER MARKER (IM) AND FAR FIELD MONITOR (FFM)
- MIDDLE MARKER (MM)
- AIRPORT REFERENCE POINT (ARP)
- LLWAS — LOW-LEVEL WINDSHEAR ALERT SYSTEM ANTENNA
- SECURITY CHECK POINT
- CONTOUR LINE

Source: San Francisco International Airport, July 2010

Exhibit II-6
AIRPORT LAYOUT PLAN
Comprehensive Airport Land Use Plan
for the Environs of San Francisco International Airport

C/CAG
City/County Association of Governments
of San Mateo County, California

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2.3.2 AIRPORT ACTIVITY DATA

While the airline industry has grown dramatically throughout its history, it is also subject to considerable volatility. Per capita income and the price of air travel are reliable predictors of air travel demand. Accordingly, during recessions and during periods of upward pressure on air fares, passenger travel demand slackens or declines. This occurred during the post-September 11, 2001 recession and again after the fuel price shock of 2008 and the subsequent economic slowdown. Aviation activity forecasts are traditionally developed in consideration of this volatility and are intended to smooth out the peaks and valleys, capturing the underlying trend.

2.3.2.1 Passenger Activity Forecasts

Airport activity forecasts, summarized in **Table II-3**, were updated in February 2010. The historical data show a marked decline in enplaned passengers and aircraft departures between 2000 and 2008, reflecting the shocks to the aviation industry in the aftermath of the September 11, 2001 terrorist attacks. The forecast projects growth in enplanements and departures through 2028. As shown, the forecast predicts that 2000 activity levels will be matched again sometime between 2013 and 2018.

Table II-3 Summary of Passenger Activity Forecasts – 2009-2028, San Francisco International Airport

YEAR	TOTAL ENPLANED PASSENGERS	ENPLANED PASSENGER MARKET SHARES		TOTAL PASSENGER AIRLINE AIRCRAFT
		DOMESTIC	INTERNATIONAL	DEPARTURES
Historical				
1990	14,782,000	87%	13%	194,573
2000	20,171,000	81%	19%	195,204
2008	18,528,000	76%	24%	172,417
2009 (estimated)	18,457,000	78%	22%	172,400
Forecast				
2013	19,989,000	77%	23%	181,100
2018	22,294,000	75%	25%	193,800
2023	24,704,000	72%	28%	207,200
2028	26,937,000	70%	30%	218,900

Notes: "Enplaned" passengers are those boarding aircraft at SFO.
2009 data estimated based on actual data from January through September 2009.

SOURCES: Jacobs Consultancy, "Forecasts of Enplaned Passengers," Technical Memorandum – Aviation Demand Forecasts, San Francisco International Airport, February 2010, page 19, Table 2 (passenger activity forecasts). Jacobs Consultancy, "Unconstrained Forecasts of Enplaned Passengers," Technical Memorandum – Aviation Demand Forecasts, San Francisco International Airport, July 2007, page 21, Table 2 (historical data for 1990 and 2000).

PREPARED BY: Ricondo & Associates, Inc., February 2012.

The market share information reflects the importance of international travel at SFO. Between 1990 and 2008, the proportion of international passengers increased from 13 percent to 24 percent of all enplaned passengers. This trend is projected to continue, with international passengers projected to increase to nearly one-third of all passengers in 2028.

2.3.2.2 Cargo Activity Forecasts

Table II-4 summarizes the results of the cargo activity forecasts that were compiled in February 2010. Based on 2009 data (estimated based on actual data from January through September 2009), the table indicates a decline in cargo activity (tonnage) from 2008 to 2009 by approximately 20 percent or 100,095 metric tons. This decrease reflects comparative trends at other national and global airports and can be attributed to increased fuel prices and the economic recession experienced around the world. Despite this decline, domestic and international cargo tonnage is anticipated to increase between 2008 and 2028 at an average of 0.8 percent and 2.8 percent per year, respectively. As shown, the forecast predicts that 2000 cargo activity levels will be reached again between 2013 and 2018.

Table II-4 Summary of Cargo Activity Forecasts – 2009-2028, San Francisco International Airport

YEAR	INTERNATIONAL (METRIC TONS)	DOMESTIC (METRIC TONS)	TOTAL AIR CARGO (METRIC TONS)	TOTAL CARGO AIRLINE DEPARTURES
Historical				
2008	286,940	205,255	492,195	3,210
2009 (estimated)	231,700	160,400	392,100	3,485
Forecast				
2013	220,400	157,300	377,700	3,920
2018	274,300	179,300	453,600	4,420
2023	370,800	215,400	586,200	5,340
2028	495,100	241,700	736,800	6,260

Notes: 2009 data estimated based on actual data from January through September 2009.
Includes cargo tonnage carried by combination carriers on freighter aircraft.
Includes the freighter operations of all-cargo airlines and combination carriers that operate both passenger and freighter aircraft.

SOURCES: Jacobs Consultancy, "Forecasts of Total Air Cargo," Technical Memorandum – Aviation Demand Forecasts, San Francisco International Airport, February 2010, page 26, Table 3.
PREPARED BY: Ricondo & Associates, Inc., February 2012.

2.3.2.3 General Aviation and Military Operations Forecasts

Aircraft operations forecasts for general aviation (GA) and military aircraft at SFO are summarized in **Table II-5**. The GA and military forecasts were compiled in February 2010 based on standard FAA methodology. GA activity includes all aviation activity other than commercial and military. At SFO, GA operations are typically related to business and corporate aviation. Factors including the economic recession, the credit crisis, increases in aircraft rental, fuel, and insurance cost, and increases in avionic instrument requirements have led to a decline in GA activity nationwide. As shown in Table II-5, the forecast indicates that GA traffic will slowly recover at SFO starting in 2013 at a rate of 100 additional GA operations per year.

Table II-5 General Aviation and Military Activity Forecasts – 2009-2028, San Francisco International Airport

YEAR	GENERAL AVIATION OPERATIONS	MILITARY OPERATIONS
Historical		
2008	15,587	2,697
2009 (estimated)	12,700	2,900
Forecast		
2013	12,700	3,000
2018	13,200	3,000
2023	13,700	3,000
2028	14,200	3,000

Notes: Airport operations include departures and arrivals.
2009 data estimated based on actual data from January through September 2009.

SOURCE: Jacobs Consultancy, "Forecasts of Total Aircraft Operations by Type," Technical Memorandum – Aviation Demand Forecasts, San Francisco International Airport, February 2010, page 28, Table 4.

PREPARED BY: Ricondo & Associates, Inc., February 2012.

Military operations at SFO averaged approximately 2,600 operations per year from 1990 through 2008.[13] At SFO, most military activity consists of helicopter operations performed by the U.S. Coast Guard. As shown in Table II-5, a total of 3,000 military operations per year are anticipated from 2013 to 2028.

2.3.2.4 Total Forecast Operations

Table II-6 presents total operations for all categories of aircraft activity at SFO.

[13] Jacobs Consultancy, "Forecasts of Total Aircraft Operations by Type," Technical Memorandum – Aviation Demand Forecasts, San Francisco International Airport, February 2010, page 32.

Table II-6 Forecast of Total Operations – 2013-2028, San Francisco International Airport

YEAR	PASSENGER	CARGO	GENERAL AVIATION	MILITARY	OTHER	TOTAL
Historical						
2008	344,834	6,420	15,587	2,697	18,566	388,104
2009 (estimated)	344,800	6,970	12,700	2,900	9,430	376,800
Forecast						
2013	362,200	7,840	12,700	3,000	10,000	395,740
2018	387,600	8,840	13,200	3,000	12,000	424,640
2023	414,400	10,680	13,700	3,000	14,000	455,780
2028	437,800	12,520	14,200	3,000	15,000	482,520

Notes Airport operations include departures and arrivals.
"Other" includes nonscheduled and empty flights. Other operations account for approximately 3 percent of commercial operations in 2009 and are assumed to account for this share in future years.
2009 data estimated based on actual data from January through September 2009.

SOURCE: Jacobs Consultancy, "Forecasts of Total Aircraft Operations by Type," Technical Memorandum – Aviation Demand Forecasts, San Francisco International Airport, February 2010, page 28, Table 4.

PREPARED BY: Ricondo & Associates, Inc., February 2012.

2.3.2.5 Forecasts by Aircraft Type and Time-of-Day

Forecasts taken from the Draft SFO Runway Safety Area (RSA) Program Environmental Assessment (EA) published in June 2011 are shown in **Table II-7**. The forecasts are based upon the approved Aviation Demand Forecast (February 2010) prepared by Jacobs Consultancy. The data was used to develop future noise contours for 2015 and 2020 in the RSA EA. These forecasts are the basis for the noise compatibility zones established in this ~~CLUP~~ALUCP.

The forecasts project wide-body air carrier aircraft to increase from about 12.5 percent to 16.9 percent of all aircraft operations from 2010 to 2020. The proportion of narrow-body aircraft is forecasted to increase from 52.6 percent to 57.3 percent during the same period. The proportion of regional jet operations is forecasted to increase slightly from 16.1 to 16.4 percent, while the proportion of business jet operations is also forecasted to increase slightly from 4.9 to 5.1 percent. Operations by propeller aircraft are forecasted to decline substantially. The proportion of commuter propeller operations is projected to decline from 11.4 to 2.8 percent, and the proportion of general aviation propeller operations from 1.3 to 0.7 percent.

Table II-7 Existing and Forecast Annual Operations by Aircraft Type, from 2011 Draft Environmental Assessment for Proposed Runway Safety Area Program, San Francisco International Airport

AIRCRAFT CATEGORY	BASELINE 2010		FORECAST 2015		FORECAST 2020	
Air Carrier, Wide-Body	48,232	12.5%	62,641	15.4%	73,751	16.9%
Air Carrier, Narrow-Body	203,789	52.6%	230,555	56.6%	250,709	57.3%
Regional Jets	62,570	16.1%	65,486	16.1%	71,631	16.4%
Commuter Prop	44,139	11.4%	22,189	5.4%	12,060	2.8%
Business Jet	18,856	4.9%	19,128	4.7%	22,366	5.1%
General Aviation Prop	4,931	1.3%	3,650	0.9%	2,924	0.7%
Military (Fixed Wing)	1,188	0.3%	2,190	0.5%	2,193	0.5%
Helicopters (Civil/Military)	3,541	0.9%	1,460	0.4%	1,462	0.3%
Total	387,246	100.0%	407,299	100.0%	437,096	100.0%

Notes: "Operations" are takeoffs and landings. Wide-body aircraft are those with two aisles and include the B-747, B-767, B-777, A-300 and similar large aircraft. Narrow-body aircraft are those with a single aisle, including the B-737, B-757, A-320, and MD-80. Regional jets are typically defined as those seating 100 passengers or less.

SOURCE: URS Corporation and BridgeNet International. *Draft Environmental Assessment, San Francisco International Airport Proposed Runway Safety Area Program*, Appendix C, Table A2, page A.3 and Table A8, page A.14, June 2011.

PREPARED BY: Ricondo & Associates, Inc., February 2012.

The 2011 Draft SFO RSA EA also presents estimates of operations by time-of-day, which is required to develop CNEL noise contour maps. In the CNEL metric, a 24-hour day is broken down into day, evening, and night. Evening is defined as 7 p.m. to 10 p.m., and 4.8 dBA is added to noise during this period; nighttime is defined as 10 p.m. to 7 a.m., and 10 dBA is added to noise during this period. The distribution of operations by time of day in 2010 is shown in **Table II-8**. The percentage distribution by time-of-day was projected to remain constant through the 10-year forecast period. Approximately 69 percent of arrivals and 70 percent of departures were estimated to occur during the 12-hour "daytime" period, approximately 19 percent of arrivals and 13 percent of departures during the 3-hour evening period, and 11 percent of arrivals and 17 percent of departures during the 9-hour nighttime period.

Table II-8 Distribution of Operations by Time-of-Day – 2010, San Francisco International Airport

	ACTUAL 2010	
TIME-OF-DAY	Arrival	Departure
Daytime (7:00 a.m. to 7:00 p.m.)	70%	69%
Evening (7:00 p.m. to 10:00 p.m.)	19%	13%
Nighttime (10:00 p.m. to 7:00 a.m.)	11%	17%

SOURCE: URS Corporation and BridgeNet International. *Draft Environmental Assessment, San Francisco International Airport Proposed Runway Safety Area Program*, Appendix C, Table A4, page A.6, June 2011.

PREPARED BY: Ricondo & Associates, Inc., February 2012.

2.3.3 TYPICAL FLIGHT PROCEDURES

The location of air traffic in the airspace around any airport depends on air traffic control procedures, the use of the runways, and the performance of the aircraft using the airport.

At a busy commercial airport such as SFO, most aircraft operate under instrument flight rules and are under FAA air traffic control during all phases of flight. Thus, some of the standard operating procedures that apply at smaller airports, including those without airport traffic control towers, are of minor significance at SFO. Procedures of minor significance include the traffic pattern altitude, which at SFO is set at 1,000 feet above mean sea level (MSL) for light aircraft and 1,500 feet MSL for heavy aircraft, and the standard left-hand traffic patterns for Runways 1L, 1R, 19L, and 28L and the right-hand traffic patterns for Runways 10R and 28R.[14]

2.3.3.1 Approach Procedures

Runways 19L, 28L, and 28R have instrument landing systems (ILS) that provide both course guidance and descent guidance. Nonprecision approaches, which provide only course guidance, are published for Runways 10L and 28R, 19L and 19R, and 28L and 28R. Runways 1L and 1R are visual approach runways only. Exhibit II-6, the airport layout drawing, shows the runway layout at the Airport.

Two charted visual approaches to Runways 28L and 28R are published. They are defined using visual landmarks and are intended to keep aircraft over San Francisco Bay for noise abatement to avoid direct overflights of communities from Foster City south.

2.3.3.2 Departure Procedures

At busy airports, it is customary for FAA air traffic control to publish Departure Procedures (DPs) for use by aircraft operating under instrument flight rules. These procedures standardize and simplify controller instructions to pilots. The detailed information needed by pilots is published on a graphic diagram known as a "departure plate," so the controller only needs to tell the pilot the name of the DP to use.

Eleven DPs are published for SFO. All DPs relating to Runways 19L and 19R require immediate left turns to avoid the steeply rising terrain southwest of the Airport. All DPs relating to Runways 28L and 28R require either that aircraft fly on the extended runway centerline to the ocean (through the San Bruno Gap) or make immediate right turns back over San Francisco Bay to avoid San Bruno Mountain and overflights of residential areas in South San Francisco and Brisbane. Aircraft departing from Runways 1L and 1R climb out northeast over the Bay along the runway heading before transitioning to one of three assigned departure headings.

2.3.3.3 Average Runway Use

FAA air traffic controllers assign runways for approaches and departures in recognition of wind and weather conditions, air traffic conditions, and noise abatement considerations. The most common operating configuration at SFO has arrivals on Runways 28L and 28R and departures from Runways 1L and 1R, with departures by heavy aircraft interspersed from Runways 28L and 28R. Other configurations are used when required by weather conditions.

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[14] These procedures generally apply to aircraft flying under visual flight rules, which account for a very small proportion of operations at SFO. See www.airnav.com/airport/KSFO.

Table II-9 shows the average annual runway use at SFO for the period from 2002 through 2008.

Table II-9 Average Annual Runway Use – 2002-2008, San Francisco International Airport

RUNWAY PAIR	ARRIVALS	DEPARTURES
Runways 1L and 1R	0.14%	64.88%
Runways 19L and 19R	5.48%	0.64%
Runways 10L and 10R	0.80%	6.79%
Runways 28L and 28R	93.58%	27.70%

SOURCE: City and County of San Francisco, Airport Commission, San Francisco International Airport, 2009.
PREPARED BY: Ricondo & Associates, Inc., February 2012.

2.3.3.4 Flight Tracks

Exhibit II-7 shows radar arrival flight tracks that were used for the updated noise contour maps prepared for the Draft Environmental Assessment for the Proposed Runway Safety Area Program at SFO.[15] The arrival tracks tend to be aligned with the runways for a considerable distance from the runway ends. This reflects the typical approach used by high performance jet aircraft, which involves a minimum stabilized straight-in approach of at least one to three miles. Most arrivals to SFO use published instrument approaches, most of which provide for extended straight-in approaches of five to eight miles. The very few arrivals to Runways 1L and 1R have relatively short final approaches. This is due to the high terrain southwest of the runway. Aircraft must make short final approaches when these runways are used for landing.

Exhibit II-8 shows departure flight tracks that were used for the noise contours maps prepared for the Draft Environmental Assessment for the Proposed Runway Safety Area Program. These tracks tend to reflect the requirements of the published DPs. Note the predominance of straight-out departures to the northwest from Runways 28L and 28R and the departures turning right short of San Bruno Mountain. The departures from Runways 1L and 1R over the Bay tend to be split into three main groups, which correspond to the headings specified in the DPs. Most of the departures to the southeast from Runways 10L and 10R make left turns over the Bay to avoid direct overflights of Foster City and other Bayfront communities for noise abatement purposes. All departures from Runways 19L and 19R turn left immediately after takeoff to avoid the high terrain directly southwest of the runway.

[15] URS Corporation and BridgeNet International. *Draft Environmental Assessment, San Francisco International Airport Proposed Runway Safety Area Program*, June 2011.

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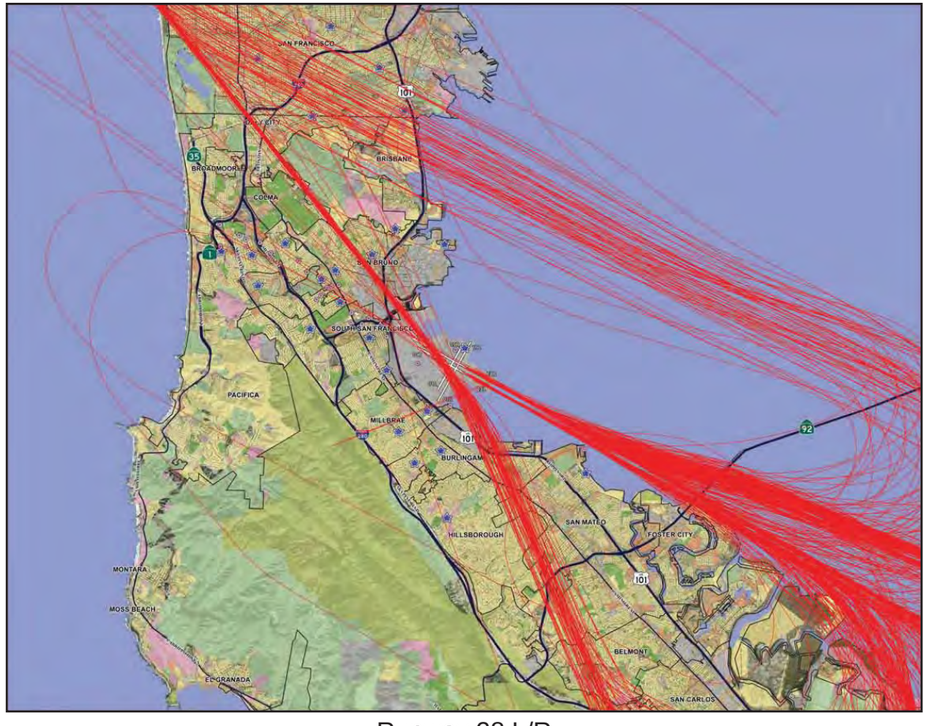
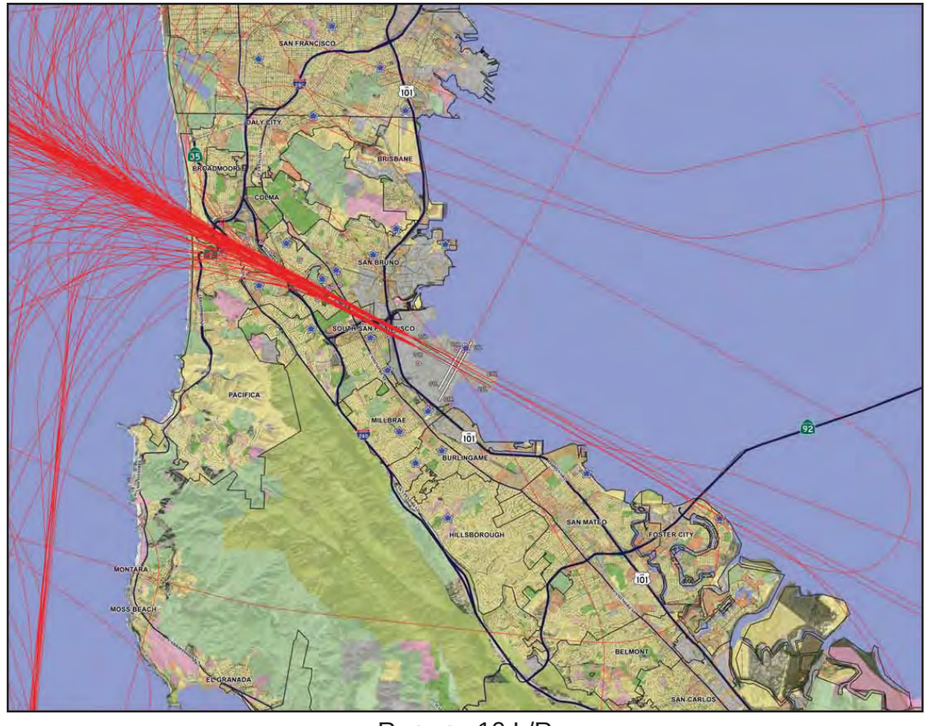
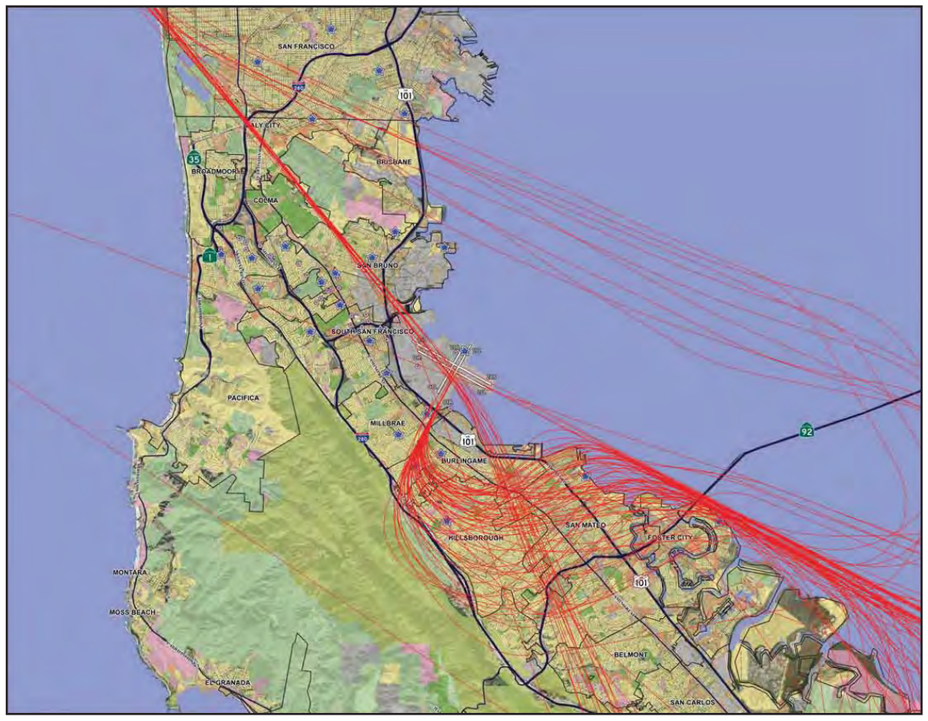


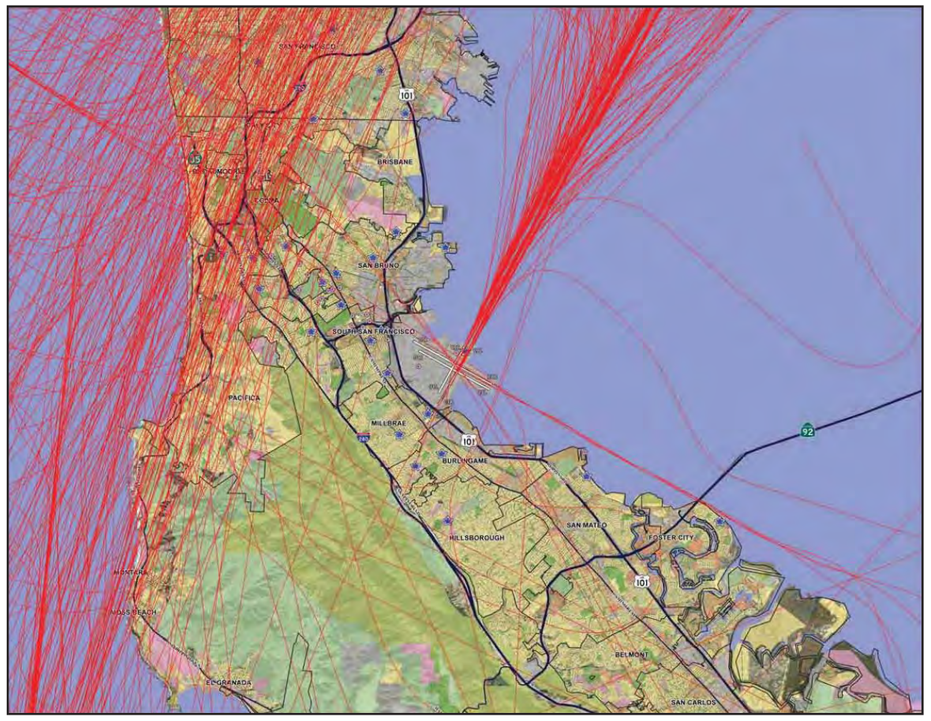
Runway 28 L/R



Runway 10 L/R



Runway 01 L/R



Runway 19 L/R

LEGEND

- Single-family Residential
- Multiple-family Residential
- Retail
- Industrial
- Public
- Agricultural
- Open Space
- Water
- Vacant
- Landmarks
- Noise Monitoring Sites
- Radar Track

Source:

URS Corporation and BridgeNet International.
Draft Environmental Assessment, San Francisco International Airport Proposed Runway Safety Area Program, Appendix C, June 2011.

NORTH

Not to scale

Exhibit II-7
ARRIVAL FLIGHT TRACKS
Comprehensive Airport Land Use Plan
For The Environs of San Francisco International Airport

C/CAG
City/County Association of Governments
of San Mateo County, California

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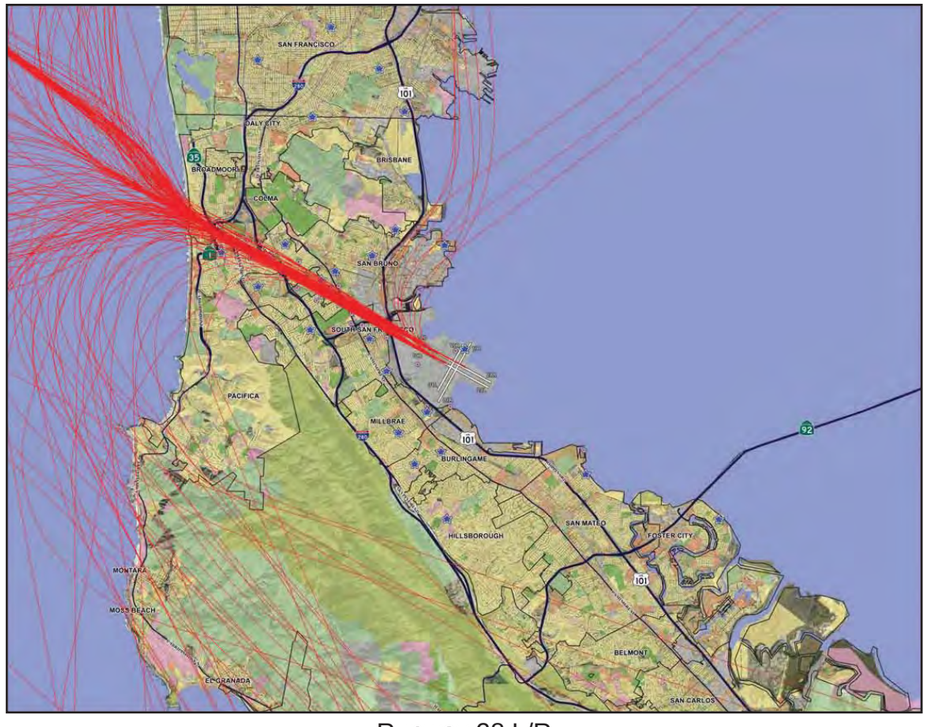
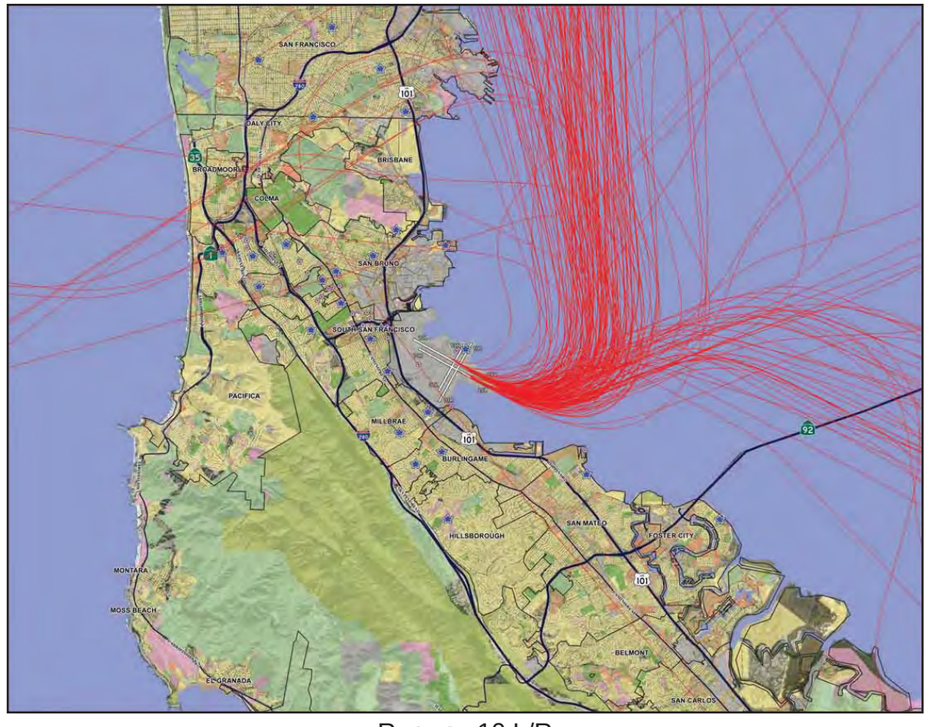
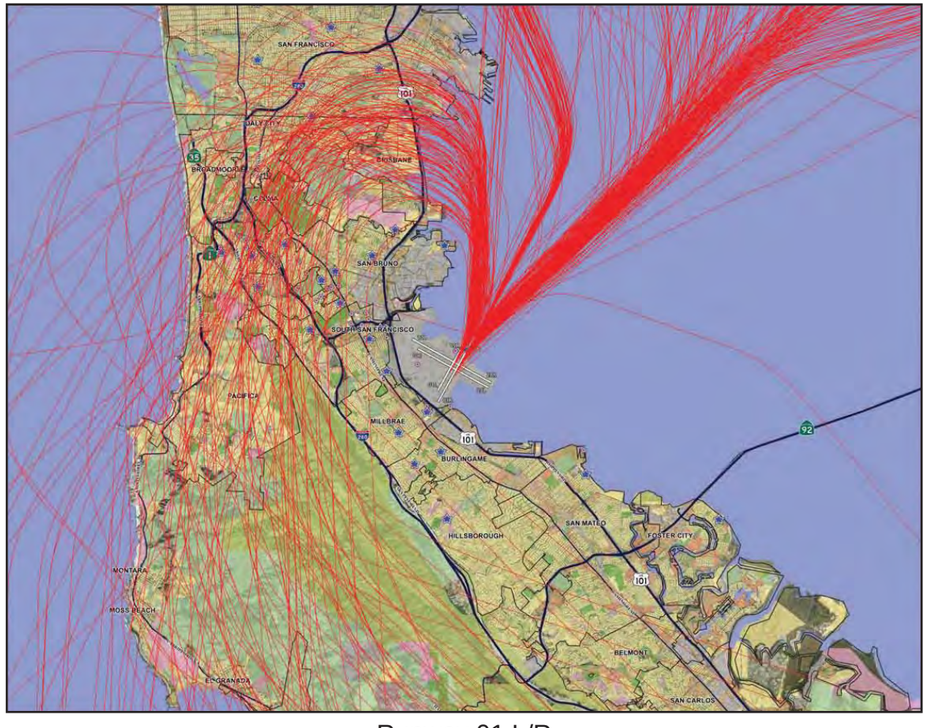


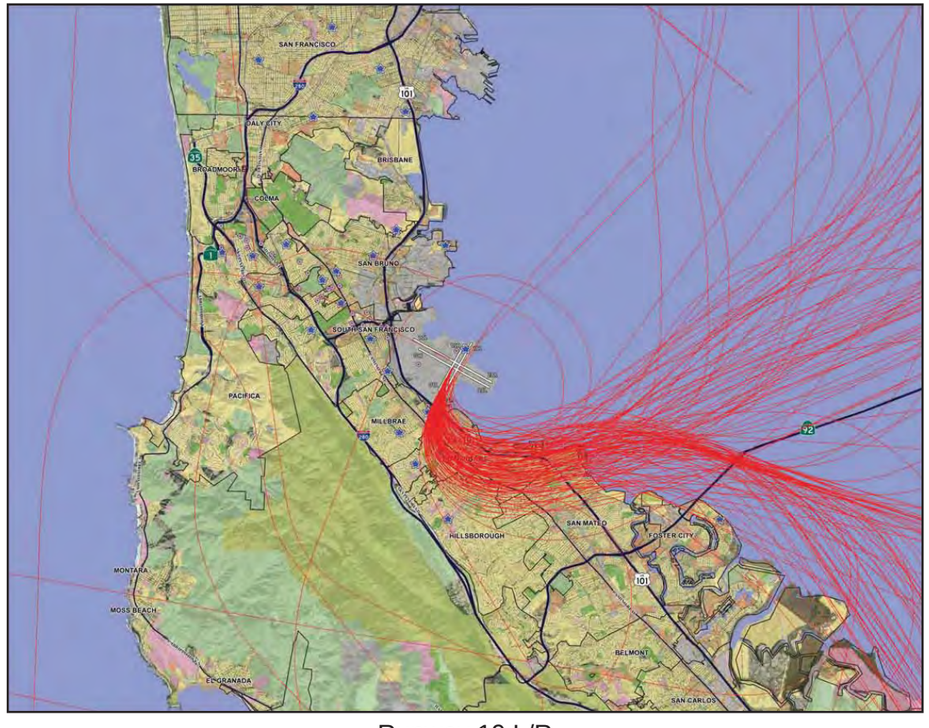
Runway 28 L/R



Runway 10 L/R



Runway 01 L/R



Runway 19 L/R

LEGEND

- Single-family Residential
- Multiple-family Residential
- Retail
- Industrial
- Public
- Agricultural
- Open Space
- Water
- Vacant
- Landmarks
- Noise Monitoring Sites
- Radar Track

Source:

URS Corporation and BridgeNet International.
Draft Environmental Assessment, San Francisco International Airport Proposed Runway Safety Area Program, Appendix C, June 2011.

NORTH

Not to scale

Exhibit II-8
DEPARTURE FLIGHT TRACKS
Comprehensive Airport Land Use Plan
For The Environs of San Francisco International Airport

C/CAG
City/County Association of Governments
of San Mateo County, California

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2.3.4 FAR PART 150 NOISE COMPATIBILITY PROGRAM

The City and County of San Francisco prepared a Federal Aviation Regulations (FAR) Part 150 Noise Compatibility Program for SFO in the early 1980s. It was adapted from the 1980 Joint Land Use Study Final Technical Report prepared for the Joint Powers Board (which included representatives of San Francisco and San Mateo Counties), and was submitted to the FAA for review and evaluation under the FAR Part 150 Noise Compatibility Program on June 14, 1982.[16] FAA found the Noise Exposure Maps (NEMs) to be in compliance with FAR Part 150 on January 17, 1983. The Noise Compatibility Program (NCP) was approved by the FAA on July 20, 1983. This program was the first in the nation to be approved by the FAA under the requirements of FAR Part 150.

At the FAA's request, the Airport updated its 1983 NEM document in 1995 to reflect changes that had occurred. The updated NEM document, which included maps of 1995 noise levels and projected 2000 levels, was accepted by the FAA as complying with FAR Part 150 on May 17, 1996. The Airport prepared a subsequent update of its Noise Exposure Maps in 2001, which were accepted by the FAA on July 22, 2002. The Airport is currently preparing an updated set of Noise Exposure Maps for the "current year" and a five-year forecast.

In accordance with guidance provided in FAR Part 150 (Table 1 in Appendix A), the Noise Exposure Maps depict noise contours of CNEL 65 dB, 70 dB and 75 dB. CNEL 65 dB is considered the level above which residential and other noise-sensitive land uses (including schools, hospitals, and places of worship) are considered incompatible. If the local land use planning jurisdictions consider these uses to be appropriate within the CNEL 65 dB contour, the FAR Part 150 guidelines advise they be treated to achieve specified outdoor-to-indoor noise level reductions.

2.3.5 STATE OF CALIFORNIA AIRPORT NOISE REGULATIONS

The State of California's airport noise standards declare that the "level of noise acceptable to a reasonable person residing in the vicinity of an airport is established as a CNEL of 65 dB…"[17] The board of supervisors of the county in which the airport is located is empowered to declare that the airport has a "noise problem" if it has incompatible land uses inside the Airport's CNEL 65 dB contour. The regulations consider the following uses to be incompatible:

- Residences
- Public and private schools
- Hospitals and convalescent homes
- Places of worship

The law stipulates that the following actions can render incompatible uses compatible:

- Acquisition by the airport of an avigation easement for aircraft noise
- Sound insulation sufficient to reduce the interior CNEL due to aircraft noise to 45 dB or less in habitable rooms

In areas where noise exposure (from any source) is greater than CNEL 65 dB, state housing law requires sound insulation for multi-family residential uses, hotels and motels, and schools. State housing law states explicitly, however, that where a noise/land use incompatibility exists, removal of existing housing should be the last resort to remedy the incompatibility.

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[16] The Joint Land Use Study was a multi-year comprehensive study to address airport ground access, air quality, and noise issues in the Airport environs. The final document was published in 1980.

[17] See California Code of Regulations, Title 21, Division 2.5, Chapter 6, Section 5006.

Under the state noise law, the area inside an airport's CNEL 65 dB contour that is occupied by incompatible uses is called the "noise impact area." Airports with a noise impact area are prohibited from operating without a variance from the state noise standards issued by the State Department of Transportation (Caltrans). Variances are typically conditioned upon the airport taking action to reduce its noise impact area to zero, defined as zero incompatible land uses within the CNEL 65 dB contour.

In 1972, the San Mateo County Board of Supervisors declared SFO to be a "noise problem airport" and the Airport was required to operate with variances from the state noise standards for a number of years thereafter. In October 2002, due to the Airport's aggressive efforts to reduce the number of incompatible land uses in its noise impact area, the San Mateo County Board of Supervisors determined that the Airport had achieved a noise impact area of zero and therefore was no longer required by the State to operate under a variance from the state noise standards.

2.3.6 AIRCRAFT NOISE EXPOSURE IN THE SFO ENVIRONS

Figure D-3 in **Appendix D** depicts the forecasted aircraft noise contours from the Draft SFO RSA EA published in June 2011. In the Draft RSA EA, the future noise environment for SFO was analyzed based upon projected operational conditions in the year 2015 and 2020. The noise exposure maps show the Airport's CNEL 65, 70 and 75 dB contours.

Table II-10 presents the number of existing dwellings and population that are forecast to be exposed to noise from aircraft operations at SFO based on the 2015 and 2020 noise contours shown on Figure D-3. As shown, the total dwellings and population exposed to aircraft noise above CNEL 65 dB, 70 dB, and 75 dB are projected to increase from 2015 to 2020.

Table II-10 Population and Housing Exposed to Aircraft Noise – 2015 and 2020, San Francisco International Airport

	2015		2020	
CNEL RANGE	EXISTING HOUSING UNITS	RESIDENT POPULATION	EXISTING HOUSING UNITS	RESIDENT POPULATION
65 to 70	5,768	17,235	6,961	21,528
70 to 75	1,573	4,695	1,939	5,494
75 and over	32	113	58	205
Total	7,373	22,044	8,958	27,228

SOURCE: URS Corporation and BridgeNet International. *Draft Environmental Assessment, San Francisco International Airport Proposed Runway Safety Area Program*, Table 4.2-2, page 4-8 and Table 4.2-4, page 4-14, June 2011.
PREPARED BY: Ricondo & Associates, Inc., February 2012.

2.3.6.1 Noise Abatement and Mitigation Programs

The City and County of San Francisco has a well-developed program to promote noise abatement and mitigation of noise impacts at SFO. The specific measures include the following:

- Preferential runway use – Whenever possible, aircraft are to land and takeoff over the Bay.
- Noise abatement flight routes – Visual approach procedures to Runways 28L and 28R have been designed to avoid direct overflights of shoreline communities. (See Section 2.3.3.1, above). A shoreline departure turn for takeoffs from Runways 28L and 28R has also been established to reduce overflights of residential areas northwest of the runways. (See Section 2.3.3.2.)
- Rapid departure climbs – Aircraft departing on Runways 28L and 28R through the San Bruno Gap are requested to climb rapidly to increase their altitude over the underlying residential areas.
- Aircraft noise management system – The Airport has had a permanent noise monitoring and flight track monitoring system for many years and has recently upgraded the system. Data from the system enable Airport staff to monitor aircraft activity on a regular basis and to track conformance with noise abatement procedures.
- Sound insulation program – Since 1983, over 15,000 homes in the Airport vicinity and within the Airport's CNEL 65 dB contour have been sound-insulated. Seven schools and 8 places of worship have also been sound-insulated. The program has been administered by each noise-impacted jurisdiction, with funding provided through a combination of FAA and Airport sources.[18]

2.3.6.2 San Francisco International Airport/Community Roundtable

The San Francisco International Airport/Community Roundtable was created by a Memorandum of Understanding (MOU) in 1981 among the City and County of San Francisco, the County of San Mateo, and several cities in San Mateo County as a voluntary committee to address community noise impacts from aircraft operations at SFO. The original purpose of the Roundtable was to monitor the implementation of the recommendations of the 1980 Joint Land Use Study Final Technical Report. That report was a joint effort between the City and County of San Francisco and the County of San Mateo regarding air quality, vehicular traffic, and aircraft noise issues related to the operation of SFO. Air quality and vehicular traffic issues were already addressed on a regional scale by existing public agencies. No local public agency, however, was responsible for addressing aircraft noise. The Roundtable quickly focused all of its efforts on noise issues related to aircraft operations at SFO and became the only public body for local residents to go to express their concerns about SFO-related noise impacts.

Local governments in San Mateo County are represented on the Roundtable by their elected officials (mayors, city council members, and County Supervisors). The City and County of San Francisco representation on the Roundtable includes a member of the San Francisco Board of Supervisors, a representative of the Mayor's Office, and a representative of the San Francisco Airport Commission (Airport Director).

The Roundtable monitors a performance-based aircraft noise mitigation program, as implemented by Airport staff, interprets community concerns, and pursues additional feasible noise mitigation actions, through a cooperative sharing of authority among representatives of the airlines that serve the Airport, FAA staff, SFO management staff, and local governments. The Roundtable has worked directly with the SFO staff in implementing a Fly Quiet Program to encourage the airlines at SFO to fly as quietly as possible to be a good neighbor to nearby communities. The 22-member organization has been meeting on a regular basis since 1981 and continues to encourage public input related to aircraft noise from SFO operations.

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[18] Participating jurisdictions include Daly City, Millbrae, Pacifica, San Bruno, South San Francisco, and the County of San Mateo.

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III DEFINITIONS, GENERAL POLICIES, AND PLAN IMPLEMENTATION

3.1 Definitions

The following definitions apply to the policies in this ~~CLUP~~ALUCP. Definitions for other commonly used aviation and planning terms are provided in Appendix A, Glossary.[1]

~~**Aeronautics Act:** Except as indicated otherwise, the article of the California Public Utilities Code, Section 21670 et seq., as amended, pertaining to airport land use commissions.~~

Airport: When capitalized, unless the context clearly indicates otherwise, San Francisco International Airport.

Airport Influence Area (AIA): A two-part area, including Area A and Area B, established by this ~~CLUP~~ALUCP and within which the ***C/CAG Board***, in its capacity as the ***Airport Land Use Commission*** for San Mateo County, exercises its jurisdiction with respect to airport land use compatibility planning**.**

Airport Land Use Commission: When capitalized, unless the context clearly indicates otherwise, the ***C/CAG Board***, acting in its capacity as the ***Airport Land Use Commission*** for San Mateo County.

Airport Land Use Committee (ALUC): The committee duly appointed by the ***C/CAG Board*** to advise the Board on matters pertaining to airport land use compatibility in San Mateo County.

Airport Layout Plan: A scaled drawing, prepared in conformance with criteria promulgated by the ***FAA***, depicting existing and proposed airport facilities, their location on an airport, and pertinent clearance and dimensional information.

Airspace Protection Area: The area beneath the ***airspace protection surfaces*** for the ***Airport***.

Airspace Protection Surfaces: Imaginary surfaces in the airspace surrounding airports defined in accordance with criteria set forth in 14 Code of Federal Regulations Part 77, Subpart C, and ***FAA*** Order 8260.3B, U.S. Standard for

[1] Note that the bolded and italicized terms in the definitions are themselves defined in Section 3.1.

Terminal Instrument Procedures (TERPS). They also include imaginary surfaces reflecting the one-engine inoperative climb procedures of commercial aircraft operators at the ***Airport***, developed in accordance with the requirements of 14 Code of Federal Regulations Part 121 and other applicable federal regulations.

ALUC: See ***Airport Land Use Committee***.

Aviation-Related Use: Any facility or activity directly associated with the air transportation of persons or cargo or the operation, storage, or maintenance of aircraft at an airport or heliport. These uses specifically include runways, taxiways, and their associated protection areas defined in accordance with ***FAA*** criteria, together with aircraft parking aprons, hangars, fixed-base operations facilities, terminal buildings, and related facilities.

Avigation Easement: A limited real property right that is granted by a property owner to an airport proprietor that provides for a right-of-way in, through, across, or about any portion of the airspace above and within the vicinity of the subject real property for the free, safe, and unobstructed passage of aircraft in flight. An ***avigation easement*** typically also allows for the creation of noise, vibration, and other effects that are attendant to the normal operation of aircraft in flight that may affect the subject real property. The avigation easement does not limit property owners' rights in the event of an abnormal activity. Depending on the specific language of the easement document, it may also limit the height of structures on the property to a certain height. As a legal instrument that is officially recorded with the County, it provides the current property owner and subsequent property owners with formal notice that his or her property is located near an airport and may be subject to impacts from airport and aircraft operations.

City/County Association of Governments of San Mateo County (C/CAG): The regional association of governments in San Mateo County, which includes elected representatives of the County of San Mateo and incorporated cities in the county. The ***C/CAG*** Board of Directors is responsible for a variety of regional transportation and environmental planning activities. The ***C/CAG Board*** also serves as the state-mandated ***Airport Land Use Commission*** for San Mateo County.

C/CAG: See City/County Association of Governments of San Mateo County**.**

C/CAG Board: The Board of Directors of ***C/CAG.***

CNEL: See ***Community Noise Equivalent Level***.

Community Noise Equivalent Level (*CNEL*): A 24-hour cumulative noise metric used in the State of California for describing aircraft noise exposure. In computing ***CNEL***, a 4.8 decibel (dB) weight is assigned to sounds during the evening hours from 7:00 p.m. to 10:00 p.m. A 10 dB weight is assigned to sounds during the nighttime hours after 10:00 p.m. and before 7:00 a.m.

Development: Any human-caused change to improved or unimproved real property that requires a permit or approval from any ***local agency*** or that is sponsored and proposed to be built by a ***local agency***. ***Development*** includes, but is not limited to, buildings or other structures, mining, dredging, filling, grading, paving, an excavation or drilling operation, and/or storage of materials.

Division of Aeronautics: California Department of Transportation, ***Division of Aeronautics***, or any successor agency that may assume the responsibilities of the ***Division of Aeronautics***.

Existing Land Use: The actual use of land or the proposed use of the land evidenced by a ***vested right*** in the land as of the effective date of this ~~CLUP~~ALUCP.

FAA: The Federal Aviation Administration.

~~**Floor Area Ratio:** The gross square footage of a building (excluding parking garages) on a site divided by the square footage of the entire site.~~

Handbook: The most recent version of the *California Airport Land Use Planning Handbook* published by the California Department of Transportation, Division of Aeronautics.

Infill: ***Development*** of vacant or underutilized land within established communities or neighborhoods that are already served with streets, water, sewer, and other infrastructure.

Land Use Jurisdiction: The County of San Mateo and the municipalities with land use regulatory jurisdiction within the ***Airport Influence Area*****.**

Land Use Policy Action: Any city or county general plan, specific plan, or zoning ordinance (including zoning maps and/or text) or any amendment to a city or county general plan, specific plan, or zoning ordinance (zoning maps and/or text). A ***land use policy action*** also refers to any school district, community college district, or special district facilities master plans or amendments to such master plans.

Local Agency: A ***land use jurisdiction***, school district, community college district, or other special district.

Lot of Record: A parcel of land platted and recorded as of the effective date of this ~~CLUP~~ALUCP.

Lot Coverage: The ratio between the ground floor area of a building (or buildings) and the area of the lot or parcel on which the building (or buildings) are placed.

Nonconforming Use: An ***existing land use*** or building that does not comply with this ~~CLUP~~ALUCP**.**

Real Estate Disclosure: A written statement that notifies the prospective purchaser of real estate, prior to completion of the purchase, of the potential annoyances or inconveniences associated with airport operations. Typically, a ***real estate disclosure*** is provided at the real estate sales or leasing offices. ***Real estate disclosure*** is required by state law as a condition of the sale of most residential property if the property is located in the vicinity of an airport and is within its AIA (see Bus. & Prof. Code, §11010; Civ. Code, §§1102.6, 1103.4, 1353). State law does not require the ***real estate disclosure*** to be recorded in the chain of title for the affected property.

Vested Right: A right to the proposed use of land as demonstrated by any of the following:

(a) A vesting tentative map that has been approved pursuant to California Government Code section 66498.1, and has not expired; or

(b) A development agreement that has been executed pursuant to California Government Code section 65866, and remains in effect; or

(c) A valid building permit that has been issued, substantial work that has been performed, and substantial liabilities that have been incurred in good faith reliance on the permit, pursuant to the California Supreme Court decision in *Avco Community Developers, Inc. v. South Coast Regional Com* (1976) 17 Cal.3d 785,791, and its progeny.

3.2 General Policies

The policies of this ~~CLUP~~ALUCP have four goals:

- To protect San Francisco International Airport (SFO) from further encroachment by incompatible land uses;
- To safeguard the general welfare of the inhabitants within the vicinity of the Airport and the public by protecting them from adverse effects of aircraft noise and by avoiding an increase in the number of people exposed to airport/aircraft related hazards;
- To ensure that no structures or land use characteristics adversely affect the navigable airspace in the vicinity of the Airport to provide for the safe passage of aircraft in flight; and
- To provide guidance to land use agencies on compatible land uses in the environs of SFO.

This ~~CLUP~~ALUCP contains general and specific policies that guide its overall implementation. The general policies that follow are to be used, in addition to the specific policies, standards, and criteria in Chapter 4, by the ~~C/CAG~~ ALUC, the Airport Land Use Commission (C/CAG Board), affected local agencies, and others, to implement the relevant provisions in this ~~CLUP~~ALUCP.

The official policy language of the ~~CLUP~~ALUCP is labeled with policy numbers (e.g., GP-1, which means General Policy number 1) and appears in shaded text boxes. Any non-shaded text provides explanatory information.

GP-1 COMPLIANCE WITH STATE LAW

The C/CAG Board, acting in its capacity as the Airport Land Use Commission for San Mateo County, and the C/CAG Airport Land Use Committee (ALUC) shall comply with the provisions in the Public Utilities Code, Chapter 4, Article 3.5 (airport land use commission statutes) Section 21670 et seq., when administering this ~~CLUP~~ALUCP and the airport land use compatibility planning process in San Mateo County. The C/CAG Board and the C/CAG ALUC also shall implement Business and Professions Code, Section 11010 (b)(13), by establishing within this ~~CLUP~~ALUCP an Airport Influence Area (AIA) within which real estate disclosure of the presence of an airport shall be required.

GP-2 AMENDMENT OF THE ~~CLUP~~ALUCP

The ~~CLUP~~ALUCP shall be amended not more than once per calendar year, as provided in the airport land use commission statutes, to maintain a current, updated document for all affected agencies and interested parties.

GP-3 EFFECTIVE DATE

This ~~CLUP~~ALUCP shall become effective immediately upon a formal adoption action by the C/CAG Board, acting in its capacity as the Airport Land Use Commission for San Mateo County.

GP-4 APPLICABILITY OF POLICIES TO EXISTING LAND USES

Existing land uses shall be exempt from the policies and criteria of this ~~CLUP~~ALUCP, except as specifically provided in this Section.

GP-4.1 Modifications to Nonconforming Uses

Modification of existing nonconforming land uses shall be permissible, provided that the modification does not increase the magnitude of the nonconformity. The magnitude of nonconformity shall be measured by:

1. For residential land uses, the number of dwelling units on the lot;
2. For nonresidential land uses, the size of the nonconforming use in terms of lot area and building floor area.

Where bedrooms or sleeping rooms are added to residential uses that are nonconforming with the noise compatibility policies of this ALUCP, those rooms must be sound-insulated to achieve an indoor noise level of CNEL 45 dB from exterior sources. In all cases, building modifications shall be subject to the airspace protection policies of this ~~CLUP~~ALUCP.

GP-4.2 Reconstruction of Nonconforming Use

~~Where an existing nonconforming building or use has been partially or totally destroyed by fire, storms, or other natural causes, it~~ Nonconforming uses may be rebuilt to a density (for residential uses, dwelling units per acre) or size (for nonresidential uses, building floor area) not exceeding that of the original construction. In all cases, however, reconstructed nonconforming uses shall comply with the noise compatibility and ~~be subject to the~~ airspace protection policies of this ~~CLUP~~ALUCP.

GP-4.3 Exceptions for Nonconforming Schools and Hospitals

Modifications, enlargement, and reconstruction of schools and hospitals that are nonconforming with the safety compatibility policies of this ALUCP shall be allowed, subject to the following conditions:

1. Building modifications, enlargements, new buildings, and reconstruction are allowed only on the

lot or, if multiple lots comprise the building site, the contiguous lots on the site existing on the date of adoption of this ALUCP. If the school or hospital is within any noise compatibility zone, as established in this ALUCP, any added classrooms, patient rooms, and patient treatment and consultation rooms must be sound-insulated to achieve an indoor noise level of CNEL 45 dB from exterior sources.

2. Where a modification results in an increase in building floor area, the number of exits required for the enlarged portion of the building under applicable building and safety codes, shall be increased by 50 percent. Where the 50-percent factor results in a fraction, the number of additional exits shall be rounded to the next highest whole number.
3. For reconstructed schools and hospitals, the number of exits required under applicable building and safety codes shall be increased by 50 percent. Where the 50-percent factor results in a fraction, the number of additional exits shall be rounded to the next highest whole number. If the reconstructed school or hospital is within any noise compatibility zone, as established in this ALUCP, it must be sound-insulated to achieve an indoor noise level of CNEL 45 dB from exterior sources.
4. In all cases, the airspace protection policies of this ALUCP shall apply.

GP-4.~~3~~4 Discontinuance of Nonconforming Use

If a nonconforming use has been discontinued for ~~12~~ 24 months or longer, any subsequent use of the property shall comply with the provisions of this ~~CLUP~~ALUCP. Local government policies that specify shorter periods shall be deemed consistent with this ~~CLUP~~ALUCP policy.

~~GP-5 POLICIES FOR INFILL DEVELOPMENT~~

~~The Airport vicinity has been densely developed with urban uses for many years. Some relatively small parcels of undeveloped land remain that may be proposed for infill development. Other infill development cases may arise where existing development is proposed to be removed and the land redeveloped. Where infill development is proposed, the following policies shall apply.~~

~~GP-5.1 Application of Noise Compatibility Policies to Infill Development~~

~~When infill development is proposed that would involve incompatible land uses, based on the noise compatibility policies of this CLUP, the following policies shall apply.~~

~~1. The proposed project may be deemed consistent with this CLUP if the proposed project is compatible with the character of the surrounding area and is otherwise consistent with the applicable general plan or specific plan. The project sponsor shall be required to provide an analysis explaining how the proposed project is compatible with the character of the surrounding area. Relevant factors in judging compatibility with the character of the area include, but are not necessarily limited to:~~

~~a. Land use type.~~

~~b. Building height and mass.~~

~~c. Orientation of the building on the lot.~~

~~d. Architectural style.~~

~~e. Site plan.~~

~~f. Landscaping plan.~~

~~g. Setbacks from the street and lot lines.~~

~~2. Increases above the nominal development density set by the local zoning ordinance, through the use of density transfers, use permits, or other strategies, shall be considered inconsistent with the CLUP;~~

~~3. An acoustical study and noise attenuation features in the design of structures shall be required to ensure that interior noise levels attributable to aircraft noise do not exceed CNEL 45 dB; and~~

~~4. An avigation easement, in the form presented in Appendix G, shall be granted to the City and County of San Francisco, as the proprietor of SFO, by the owner(s) of the real property on which the proposed project is to be constructed, per the process and criteria described herein.~~

~~GP-5.2 Application of Safety Compatibility and Airspace Protection Policies to Infill Development~~

~~Notwithstanding the other provisions of Policy GP-5, any new development or redevelopment shall comply with the safety compatibility policies and the airspace protection policies of this CLUP.~~

GP-5 GOVERNING ALUCP

Land use policy actions and development actions are subject to this ALUCP unless the circumstances defined below apply.

GP-5.1 Development Actions With Previous Airport Land Use Commission (C/CAG Board) Consistency Determinations

Proposed development actions determined to be consistent or conditionally consistent with the ALUCP in effect at the time of Airport Land Use Commission (C/CAG Board) project review do not require further review under this ALUCP, unless the proposed development is within Area B of the AIA, the project referral area, and one or more of the following changes are proposed:

1. An increase in the proposed residential density

2. The addition of a land use that is incompatible under this ALUCP[2]

3. The height of a structure is to be increased and would create a hazard or obstruction as determined

[2] See Chapter 4, Policies NP-2 and SP-2.

by the FAA

4. The addition of a characteristic that would create a hazard to air navigation[3]

If any of these changes are proposed, the development action must be reviewed for consistency with this ALUCP.

GP-5.2 Development Actions Located Outside the AIA of Previous CLUP

Development actions located outside the AIA of the previous CLUP (but within the project referral area of this ALUCP) that are in the review process or have been approved by the local agency must be reviewed under this ALUCP if any of the changes described in Policy GP-5.1 are proposed and the development action requires additional local agency review and approval.

GP-5.3 Land Use Policy and Development Actions in the Review Process Before the Effective Date of this ALUCP

Proposed land use policy or development actions for which applications were deemed complete per the Government Code by the local agency prior to the effective date of this ALUCP are subject to the previous CLUP.

If any of the changes described in Policy GP-5.1 are proposed after the effective date of this ALUCP and before the land use policy or development actions are approved by the local agency, they must be reviewed for consistency with this ALUCP, even if previously reviewed by the Airport Land Use Commission (C/CAG Board).

GP-6 FINDINGS AS TO SIMILAR USES

Cases may arise where a proposed development project involves a land use that is not explicitly provided for by the land use criteria in Chapter 4 of this ~~CLUP~~ALUCP. In such cases, conventional rules of reason shall be applied in determining whether the subject land use is substantially similar to any land use which is specified in the criteria in Chapter 4. In making these determinations, the reviewing officials shall consult the latest edition of the *Airport Land Use Planning Handbook*, prepared under the direction of the California Department of Transportation, and land use classification systems available through the American Planning Association and other authoritative sources.

GP-7 PROPERTIES DIVIDED BY A COMPATIBILITY ZONE BOUNDARY

For the purpose of evaluating consistency with the compatibility criteria set forth in this ~~CLUP~~ALUCP, any parcel that is split by compatibility zone boundaries shall be considered as if it were multiple parcels

[3] See Chapter 4, Policy AP-4.

divided at the compatibility zone boundary line. Only the portion of the parcel that lies within the compatibility zone boundary shall be subject to the airport/land use compatibility consistency evaluation.

GP-8 LAND USE COMPATIBILITY PLANNING COORDINATION

An important purpose and function of the ~~CLUP~~ALUCP is to coordinate airport land use compatibility planning across jurisdictions. To further that purpose, the following policies shall apply:

GP-8.1 Notification and Review of Proposed Land Use Policies ~~Proposed Planning Projects~~

Any proposed land use policy action that affects property within the project referral area, Area B of the AIA, must be referred to the Airport Land Use Commission (the C/CAG Board) for a determination of consistency with the relevant policies of this ~~CLUP~~ALUCP. Local jurisdictions shall notify the Airport Land Use Commission of every such proposed land use policy action as required by State law. The Airport Land Use Commission shall notify the SFO Airport Director, or the Airport Director's designee, as soon as possible after it receives a request for a consistency review of a proposed land use policy action. The intent is to afford the appropriate Airport staff an opportunity to review and comment on the proposed land use policy action.

GP-8.2 Notification to Airport of Proposed Land Use Policy Actions

C/CAG shall encourage local governments to inform the Airport of proposed land use planning projects within Area B of the AIA in a manner and at a time that enables Airport staff to review and provide timely comments on the proposed land use policy actions.

GP-8.3 Airport Vicinity Development Coordination Committee

C/CAG shall encourage local government planners and Airport planners to participate in a committee convened by C/CAG that would meet periodically to discuss potential development and planning proposals on the Airport and in the local communities. The Committee would have no specific powers or authority but would serve as a forum for communication and coordination at the staff level.

GP-8.4 Advisory Review of Development Proposals

Under state law, local governments may submit development proposals to the Airport Land Use Commission for non-binding advisory review. C/CAG shall encourage local governments to submit the following types of development proposals within Area B of the AIA to the Airport Land Use Commission for advisory review: commercial or mixed use development of more than 100,000 square feet of gross building area; residential or mixed use development that includes more than 50 dwelling units; public or private schools; hospitals or other inpatient medical care facilities; libraries; and places of public assembly.

3.3 ~~CLUP~~ALUCP Implementation and Administration

This Section explains the implementation and administration of the ~~CLUP~~ALUCP and the two-step airport land use commission review process in San Mateo County.

GP-9 LOCAL AGENCY ACTIONS REQUIRED AFTER ADOPTION OF ~~CLUP~~ALUCP ~~REVISIONS~~ OR ALUCP AMENDMENTS

Upon adoption of an amendment to the ~~CLUP~~ALUCP by the Airport Land Use Commission (C/CAG Board), the Airport Land Use Commission~~C/CAG Board~~ shall notify all affected local agencies of the adoption action.

State law (Govt. Code, Section 65302.3) gives affected local agencies 180 calendar days to amend their general plans, specific plans, and zoning ordinances, as necessary, to be consistent with the amended ~~CLUP~~ALUCP. In the case of special districts, school districts, and community college districts, this consistency requirement shall apply to their facilities master plans.

If an affected local agency does not concur with the provisions of the amended ~~CLUP~~ALUCP, it must make specific findings that its general plan, specific plans, and zoning ordinance or, in the case of special districts, school districts and community college districts, its facilities master plans, are consistent with the intent of the airport land use commission statutes, as amended, in compliance with the local agency override process established in state law (see Section 3.3.3, below).

3.3.1 AIRPORT LAND USE COMMISSION REVIEW OF LOCAL AGENCY ACTIONS

State law directs local land use agencies and airport operators to submit certain proposed actions to the airport land use commission for determinations of consistency of the proposed action with the ~~CLUP~~ALUCP.

GP-10 PROPOSED LOCAL AGENCY ACTIONS REQUIRING REVIEW BY THE AIRPORT LAND USE COMMISSION (C/CAG BOARD)

The kinds of local agency actions subject to review by airport land use commissions differ depending on whether the local agency has made its general plan, specific plans, and zoning ordinance, or facilities master plan consistent with the ~~CLUP~~ALUCP or has made a decision overriding the ~~CLUP~~ALUCP.

Proposed local agency actions that are subject to review by airport land use commissions include: (1) proposed development actions; (2) local land use policy actions.[4]

GP-10.1 Scope of Airport Land Use Commission (C/CAG Board) Review Before Local Agency Makes Local Plans Consistent with ~~CLUP~~ALUCP or Overrides

[4] Terms are defined in Section 3.1.

~~CLUP~~ALUCP

Before an affected agency makes its general plan, specific plans, and zoning ordinance, or facilities master plan either consistent with the ~~CLUP~~ALUCP or overrides the ~~CLUP~~ALUCP as provided by law, the local agency shall refer any ***proposed ~~development and~~ land use policy action*** and any ***proposed development action*** described in this section that affects property within the project referral area, Area B of the AIA, to the Airport Land Use Commission (the C/CAG Board) for a determination of consistency with the ~~CLUP~~ALUCP before adopting the proposed land use policy action or ~~prior to~~ issuing a permit for the proposed development (Pub. Util. Code, Section 21676.5(a)). The following development actions are subject to the requirements of this section.

1. Proposed development of land uses considered to be incompatible or conditionally compatible with aircraft noise above CNEL 65 dB.
2. Proposed development of land uses considered to be incompatible or as uses to be avoided within the airport safety zones.
3. Proposed development of structures exceeding 35 feet in height.
4. Proposed alterations increasing the height of buildings above 35 feet in height.
~~1.~~5. Proposed land uses including features that could create hazards to aircraft in flight, as described in Policy AP-4 in Chapter 4.

GP-10.2 Scope of ~~Airport Land Use Commission (C/CAG Board)~~ Review After Local Agency Makes Local Plans Consistent with ~~CLUP~~ALUCP or Overrides ~~CLUP~~ALUCP

After local agencies have either made their local plans and zoning ordinances or facilities master plans consistent with the ~~CLUP~~ALUCP or overridden the ~~CLUP~~ALUCP as provided by law, Public Utilities Code, Section 21676 (b) requires local agencies to submit proposed land use policy actions to the airport land use commission for a determination of the consistency of the proposed action with the ~~CLUP~~ALUCP prior to local agency approval of such action. This requirement shall apply to any proposed land use policy action that affects property within the project referral area, Area B of the AIA.

GP-10.3 Review of Airport and Heliport Plans

Airport Land Use Commission (C/CAG Board) review of two categories of airport plans is required by state law – (1) airport and heliport master plans and (2) plans for construction of new airports and heliports.

- ***Airport Master Plans.*** Public Utilities Code, Section 21676(c) mandates that "each public agency owning an airport within the boundaries of an airport land use commission plan shall, prior to modification of its master plan, refer such proposed change to the airport land use commission." The Airport Land Use Commission (C/CAG Board) will then determine if the proposed master plan is consistent with the adopted ~~CLUP~~ALUCP.[5] This requirement also applies to airport layout plans that would effectively modify any provisions of a previously adopted airport master plan.

[5] As a practical matter, this provision ensures that airport land use commissions are kept informed of changes in airport plans so that appropriate revisions and updates to the ~~CLUP~~ALUCP may be made. Section 21675(a) of the Public Utilities Code requires that ~~CLUP~~ALUCPs "shall be based on a long-range master plan or an airport layout plan…"

- ***Construction Plans for a New Airport.*** State law also requires that no application for the consideration of plans for a new airport may be submitted to any local, regional, state, or federal agency unless the plans have been: (1) approved by the board of supervisors or the city council of the jurisdiction in which the airport is to be located and (2) submitted to and acted upon by the airport land use commission in the county in which the airport is to be located.

GP-11 EXEMPTION OF SPECIAL DISTRICTS FROM AIRPORT LAND USE COMMISSION (C/CAG BOARD) REVIEW PROCESS

C/CAG may exempt special districts from the requirement to submit proposed development and land use policy actions for consistency determinations if the scope of project responsibilities of the special district does not involve any potential inconsistencies with the ~~CLUP~~ALUCP. The process of granting an exemption to a special district may be initiated either by C/CAG or the special district.

GP-11.1 Application for Exemption

An application for exemption of a special district from the ~~CLUP~~ALUCP consistency review process must include the following information:

1. Name of the special district, and address of the headquarters office.
2. Name and contact information for the executive director of the special district.
3. Name and contact information for the person preparing the application.
4. A map depicting the boundaries of the special district in relation to AIA Area B.
5. A description of the responsibilities and duties of the special district, including a description of all facilities built, operated, maintained, or planned by the special district and a map showing the location of existing and planned facilities with respect to AIA Area B.
6. An explanation of why the facilities built, operated, maintained, or planned by the special district and located within AIA Area B do not and would not conflict with any land use compatibility policies of the ~~CLUP~~ALUCP. The explanation must address all noise compatibility, safety compatibility, and airspace protection policies of the ~~CLUP~~ALUCP.

GP-11.2 ALUC Review of Exemption Application

After receipt of a complete application for exemption, the C/CAG staff shall distribute copies of the application to all members of the ALUC and place the consideration of the application on the agenda of the ALUC.

The ALUC shall review and discuss the application, granting a representative of the special district and members of the public an opportunity to offer comments and testimony. The ALUC shall make a recommendation to the Airport Land Use Commission (C/CAG Board) for approval or disapproval of the application for exemption.

GP-11.3 Airport Land Use Commission (C/CAG Board) Action on Exemption Application

The C/CAG staff shall forward the application and the ALUC's recommendation to the Airport Land Use Commission (C/CAG Board) and schedule consideration of the application for the next available Board meeting. The Airport Land Use Commission ~~C/CAG Board~~ shall review and discuss the application and the ALUC recommendation, granting a representative of the special district and members of the public an opportunity to offer comments and testimony. The Airport Land Use Commission ~~C/CAG Board~~ shall make a decision on the application for exemption. Approval of the application shall be in the form of a resolution.

A resolution of approval shall include findings documenting that the responsibilities and duties of the special district and all facilities operated, maintained, or planned by the special district pose would involve no potential conflicts with any land use compatibility policies of the ~~CLUP~~ALUCP.

GP-11.4 Documentation of Airport Land Use Commission (C/CAG Board) Approval of Exemption

All Airport Land Use Commission (C/CAG Board) resolutions approving the exemption of special districts from the ~~CLUP~~ALUCP consistency review process shall be kept as part of the ~~CLUP~~ALUCP document distributed and posted electronically or in hard copy.

GP-12 AIRPORT LAND USE COMMISSION (C/CAG BOARD) CONSISTENCY DETERMINATION PROCESS

In its review of proposed development, land use policy actions, and airport and heliport plans, described in Policy GP-10, for a determination of consistency or inconsistency with the ~~CLUP~~ALUCP, the Airport Land Use Commission (C/CAG Board) shall follow the process described herein.

GP-12.1 Two-Step Process

The airport/land use compatibility review process includes two steps. A diagram of the process is shown on **Exhibit III-1**. The review process is initiated by a local agency, as specified in the airport land use commission statutes, as amended. The first step is review by the ~~C/CAG~~ ALUC; the second step is review and final action by the Airport Land Use Commission (C/CAG Board). The process is described below.

Step 1: Review by the ~~C/CAG~~ Airport Land Use Committee (ALUC)

a. The affected agency refers the proposed development or land use policy action, including all relevant documentation, to C/CAG ALUC staff. ALUC staff reviews the submitted materials, coordinates the review with the affected local agency staff, and schedules the item for the next available ALUC meeting. ALUC staff also prepares a report for ALUC and public review. The staff report describes the proposed action and includes an analysis of the relevant airport land use compatibility issues related to the proposed action and a recommended ALUC action.

b. The ~~C/CAG~~ ALUC reviews the proposed development or land use policy action, considers relevant public input, and takes action by adopting a motion to advise the Airport Land Use Commission (the C/CAG Board) whether the proposed action is consistent or inconsistent with the relevant provisions in the ~~CLUP~~ALUCP. The ALUC review includes a presentation of the staff report by ALUC staff and opportunities for comments from representatives of the affected local agency, other agencies, and the public.

c. The ~~C/CAG~~ ALUC recommendation is transmitted to the Airport Land Use Commission (the C/CAG Board) via a report prepared by ALUC staff.

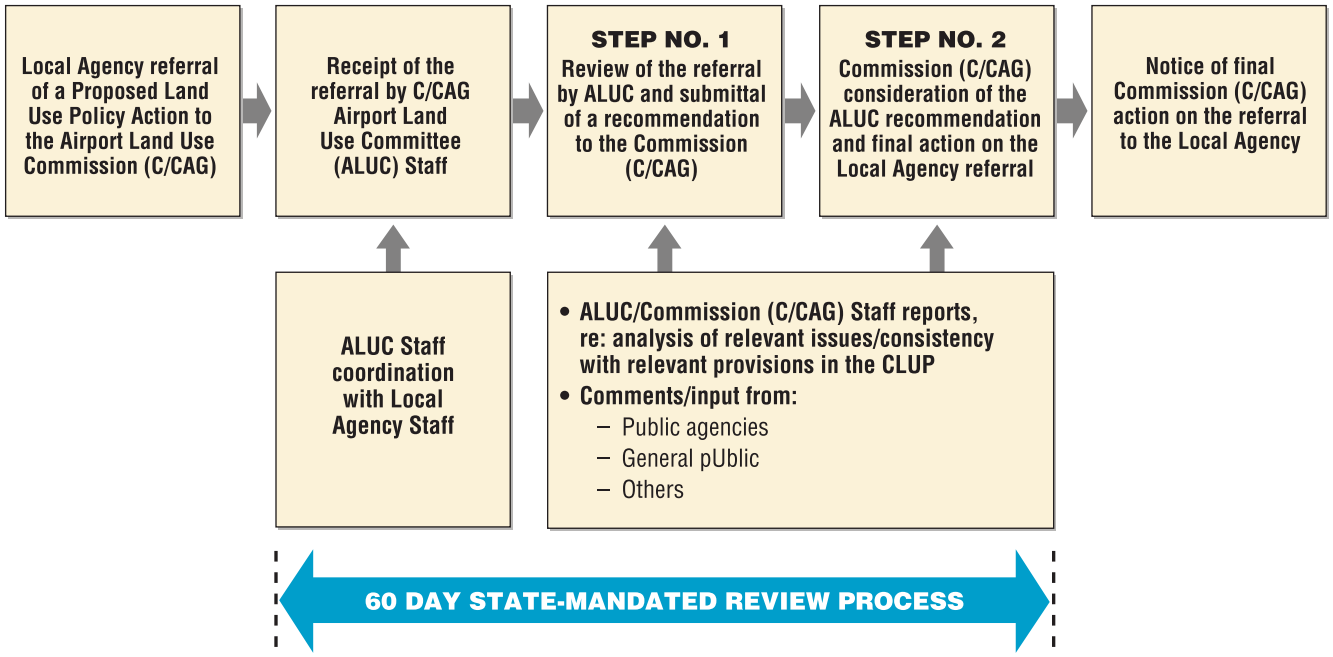

Exhibit III-1
SAN MATEO COUNTY AIRPORT LAND USE COMMISSION (C/CAG)
TWO-STEP REVIEW PROCESS
Comprehensive Airport Land Use Plan
for the Environs of San Francisco International Airport

C/CAG
City/County Association of Governments
of San Mateo County, California

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Step 2: Review/Final Action by the Airport Land Use Commission (C/CAG Board)

a. The proposed development or land use policy action is scheduled for consideration at the next available Airport Land Use Commission (C/CAG Board meeting). ALUC staff prepares a report for review by the Airport Land Use Commission ~~C/CAG Board~~ that describes the proposed action and includes a copy of the ALUC staff report and the ~~C/CAG~~ ALUC recommendation.

b. The Airport Land Use Commission (C/CAG Board) reviews the ~~C/CAG~~ ALUC recommendation and adopts a motion declaring whether the proposed development or land use policy action is consistent or inconsistent with the relevant provisions in the ~~CLUP~~ALUCP. The Airport Land Use Commission's ~~C/CAG Board's~~ review includes opportunities for comments from the affected local agency, other agencies, and the public.

c. The Airport Land Use Commission (C/CAG Board) formally notifies the affected local agency, in writing, of its final action on the proposal.

GP-12.2 Response Time Requirement

The Airport Land Use Commission (C/CAG Board) must respond to a local agency's request for a consistency determination on a proposed development or land use policy action within 60 days of the receipt of the referral by ALUC staff. However, this review period does not begin until all necessary documentation has been received by ALUC staff. The determination of the completeness of the information is made by ALUC staff.

In San Mateo County, the 60-day review period includes a review by the ~~C/CAG~~ ALUC. Coordination of the two-step review process by ALUC staff is critical to completing the review within the mandated 60-day review period. If the Airport Land Use Commission (C/CAG Board) does not act on the referral within the 60-day limit, the proposed development or land use policy action is deemed consistent with the ~~CLUP~~ALUCP by law.

GP-12.3 Review Fees

There is currently no State funding provided to support the cost of operating the Airport Land Use Commission. Therefore, the Airport Land Use Commission (C/CAG Board) will work cooperatively with the Airport operator and the cities/county to provide equitable funding for the Airport Land Use Commission.

3.3.2 CONSISTENCY DETERMINATIONS

The key element of the Airport Land Use Commission's (C/CAG Board's) review of proposed development and land use policy actions is the determination ~~concept~~ of "consistency" with the relevant provisions in the ~~CLUP~~ALUCP. According to the 2011 *Airport Land Use Planning Handbook*, "'consistency' does not require being identical. It means

only that the concepts, standards, physical characteristics, and resulting consequences of a proposed action must not conflict with the intent of the law or the ~~CLUP~~ALUCP to which the comparison is being made."[6]

Consistency with the ~~CLUP~~ALUCP involves more than elimination of direct conflicts. Local agencies must establish procedures that implement and ensure compliance with compatibility policies. To accomplish this, "local plans and/or policies must:

- Delineate the compatibility criteria to be applied to individual development actions;
- Identify the mechanisms to be used to ensure that applicable compatibility criteria are incorporated into site specific development projects; and
- Indicate the procedures to be followed in review and approval of development actions affecting lands within the airport influence area, recognizing that certain types of land uses are not subject to discretionary approvals (but can be subject to appropriate ministerial development standards)."[7]

The substance of consistency reviews varies with the type of proposed action being reviewed. The following is a summary of the key factors that must be considered in the three broad categories of consistency reviews.

GP-13 DETERMINATION OF CONSISTENCY OF PROPOSED LAND USE POLICY ACTIONS WITH THE ~~CLUP~~ALUCP

GP-13.1 General Plan, Specific Plan, and Zoning Ordinance/Rezoning Review

General plan, specific plan, and zoning ordinance/rezoning reviews are based on the ability of the proposed land use policy action to prevent future development of land uses or land use characteristics that would conflict with the relevant airport/land use compatibility policies, standards, and criteria of this ~~CLUP~~ALUCP. These consistency evaluations must consider the following factors, based on their relationship to the relevant policies and criteria of the ~~CLUP~~ALUCP:

- Residential densities;
- Types of non-residential land uses;
- Open space uses;
- Height limits/architectural features/materials;
- Sound insulation requirements;
- Exposure to aircraft noise/overflight;
- Potential impact on airspace protection.

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[6] State of California, Department of Transportation, Division of Aeronautics, *California Airport Land Use Planning Handbook*, October 2011, p. 5-3.

[7] State of California, Department of Transportation, Division of Aeronautics, *California Airport Land Use Planning Handbook*, October 2011, p. 5-3.

GP-13.2 School District, Community College District, and Special District Master Plan Review

Facilities master plan reviews must consider whether the master plans propose any land uses that would be incompatible or conditionally compatible in any noise or safety zone. The consistency review must also consider the potential for planned projects to encroach into protected airspace or introduce any potential hazards to aircraft in flight.

GP-13.3 Consistency Reviews of Proposed Airport Master Plans and Expansion Plans

Under state law (Pub. Util. Code, Section 21676(c)), any public agency owning an airport must, prior to the adoption or modification of its airport master plan, refer the proposed action to the Airport Land Use Commission (C/CAG Board). According to the *Handbook*, "the question to be examined [by airport land use commissions] is whether any components of the airport plan would result in greater noise and safety impacts on surrounding land uses than are assumed in the adopted compatibility plan."[8] Components of the airport plans that merit consideration in the consistency review include:

- Aviation activity forecasts;
- Changes to runway layout;
- Changes to flight tracks resulting from the proposed action;
- Changes to airspace parameters;
- Plans for non-aviation development on airport property (such as hotels, office buildings, or industrial buildings), which should be evaluated the same as projects proposed elsewhere in the project referral area.

~~Where the proposed airport plans are based on new policies of the airport operator, t~~The Airport Land Use Commission (the C/CAG Board) should update the ~~CLUP~~ALUCP to account for the new airport plans.[9] (Under state law, Airport Land Use Commissions have no jurisdiction over the operation of airports [Pub. Util. Code, Section 21674(e)].)

3.3.3 LOCAL AGENCY OVERRIDE OF AN AIRPORT LAND USE COMMISSION ACTION

Section 21675.1(d) of the Public Utilities Code provides for local agencies to override decisions or actions of an airport land use commission on land use matters and airport master plans. The local agency override process involves three mandatory steps (Pub. Util. Code, Sections 21676(b) and 21676(c)):

1. Holding a public hearing by the local agency on the proposed override action;
2. Making of specific findings by the governing body of the local agency that the proposed local action is consistent with the purposes of the airport land use commission statutes, as amended;

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[8] State of California, Department of Transportation, Division of Aeronautics, *California Airport Land Use Planning Handbook*, October 2011, p. 6-15.

[9] State of California, Department of Transportation, Division of Aeronautics, *California Airport Land Use Planning Handbook*, October 2011, p. 6-16.

3. Approval of the override action by a two-thirds vote of the local agency's governing body; the override action must include adoption of the specific findings identified in Step 2, above.

3.3.3.1 Findings

Adoption of findings is the key element of the local agency override of an airport land use commission action. The purpose of adopting findings is to assure that the proposed local agency action complies with state law. Findings are defined as legally relevant conclusions that explain the decision-making body's method of analyzing the relevant facts, regulations, and policies and the agency's rationale for taking the override action. The findings must show that the proposed local agency action is consistent with the purposes stated in Public Utilities Code, Section 21670, et seq.

3.3.3.2 Implications of a Local Agency Override Action

There are two key outcomes of a local agency override of an Airport Land Use Commission (C/CAG Board) land use action:

- The proposed local agency action is determined by the local agency to be consistent with the relevant provisions of this ~~CLUP~~ALUCP, just as if the Airport Land Use Commission (C/CAG Board) had found the proposed action to be consistent with this ~~CLUP~~ALUCP.
- If a city or county overrides an action by the airport land use commission with respect to a publicly owned airport that is not operated by that city or county, the agency operating the airport "shall be immune from liability for damages to property or personal injury caused by or resulting directly or indirectly from the public agency's decision to override the commission's action or recommendation" (see Pub. Util. Code, Section 21678).

A diagram illustrating the local agency override process is provided in **Exhibit III-2**.

Where the local agency override action involves a safety or noise compatibility policy of the ALUCP, the process ends at this point and the override decision of the local agency is final. Attempts to override the airspace protection policies of the ALUCP are more complex because of the roles of the FAA and the State Department of Transportation in protecting the navigable airspace.

3.3.3.3 Override of Airspace Protection Policies

In contrast to safety and noise compatibility policies, the federal government, acting through the FAA, and the State of California, acting through the Department of Transportation (Caltrans), Division of Aeronautics, are directly involved in protecting airspace. Although a local government may override the airspace protection provisions of the ALUCP as described in the previous section, the sponsor of the proposed project is still subject to the requirements of federal and state law. Those requirements effectively prohibit the construction of any structure determined by the FAA to be a hazard to air navigation.

As discussed in detail in Appendix F, federal law requires sponsors of proposed projects exceeding specified heights to file a Notice of Construction or Alteration (Form 7460-1) with the FAA before beginning construction. The FAA then undertakes an aeronautical study of the proposed construction. The FAA study ultimately concludes with a Determination of No Hazard (DNH) or a Determination of Hazard (DOH). The FAA issues a DOH when it finds that the proposed construction would be an obstruction to air navigation and would have a substantial aeronautical

impact.[10] According to Joint Order (JO) 7400.2H, *Procedures for Handling Airspace Matters*, a substantial aeronautical impact is indicated if the proposed construction would:[11]

a. Require a change to an existing or planned IFR minimum flight altitude, a published or special instrument procedure, or an IFR departure procedure for a public-use airport.
b. Require a VFR operation, to change its regular flight course or altitude…
c. Restrict the clear view of runways, helipads, taxiways, or traffic patterns from the airport traffic control tower cab.
d. Derogate airport capacity/efficiency.
e. Affect future VFR and/or IFR operations as indicated by plans on file.
f. Affect the usable length of an existing or planned runway.

The airspace protection policies of the ALUCP prohibit the erection of structures that would penetrate the airspace surfaces defined by the U.S. Standard for Terminal Procedures (TERPS) and the One-Engine-Inoperative procedures of airlines operating at SFO. These surfaces are designed to provide safe obstacle clearance by aircraft using these procedures. In its review of proposals to build structures penetrating these surfaces, the FAA is likely to issue a DOH. This is because structures penetrating these surfaces would trigger either or both of two criteria in JO 7400.2H (in bold text above).

While the FAA has no authority to prohibit the erection of a structure that it determines to be a hazard to air navigation, Caltrans is specifically empowered by state law to do so. Specifically, the law prohibits the construction of any object that would be an obstruction and a hazard to air navigation without a permit issued by Caltrans.[12] Caltrans has never issued a permit for the construction of an object deemed by the FAA to be a hazard.[13]

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[10] 14 CFR Part 77, §77.31(c).

[11] JO 7400.2H, *Procedures for Handling Airspace Matters*, Section 6-3-3. Emphasis added.

[12] California Public Utilities Code §21659 (a).

[13] Terry Barrie, Chief, Office of Aviation Planning, California Division of Aeronautics. Interviewed by Mark R. Johnson, Ricondo & Associates, Inc., May 2009.

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OVERRIDE PROCESS[1]

- Local agency must hold a public hearing to consider overriding the Commission's (C/CAG) action.
- Local agency must make specific findings that its proposed action is consistent with the purposes of the Airport Land Use Commission statutes, as amended
- Local agency must approve overriding the Commission's (C/CAG) action by at least a 2/3 vote; the override action must include adoption of the specific findings.

IMPLICATIONS OF OVERRIDE ACTION

- Proposed action is determined by the local agency, not the Commission (C/CAG), to be consistent with the airport land use commission statutes, as amended.
- The relevant airport "shall be immune from liability for damages resulting directly or indirectly from the public agency's decision to override the Commission's action or recommendation."[2]
- The Airport Land Use Commission statutes, as amended, do not specify who will be liable for damages as a result of an override action.

Notes:

1. A timeframe for completion of the local agency overrride process is not specified in the Airport Land Use Commission statutes, as amended.
2. Public Utilities Code, Section 21678.

SFO753 F-0002

Exhibit III-2

LOCAL AGENCY OVERRIDE OF A SAN MATEO COUNTY AIRPORT LAND USE COMMISSION (C/CAG) ACTION

Comprehensive Airport Land Use Plan
for the Environs of San Francisco International Airport

C/CAG

City/County Association of Governments
of San Mateo County, California

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IV AIRPORT/LAND USE COMPATIBILITY POLICIES

4.1 Introduction

This chapter presents policies and maps relating to the state-mandated airport compatibility factors – noise, safety, and airspace protection. This chapter also presents maps establishing a two-tier AIA within which the state real estate disclosure law related to aircraft overflights and potential airport and aircraft real property impacts shall apply.

The official policy language of the ~~CLUP~~ALUCP is labeled with policy numbers and appears in shaded text boxes. Any non-shaded text provides explanatory information.

One overall land use policy (LP) shall apply to the ~~CLUP~~ALUCP.

LP-1 RELATIONSHIP OF COMPATIBILITY CRITERIA TO PROPOSED LAND USE POLICY ACTIONS

The airport/land use compatibility of a proposed development or land use policy action, as described herein, shall be determined by comparing the proposed land use policy action or development with the safety compatibility criteria, the noise compatibility criteria, and the airspace protection/height limitation criteria contained in this ~~CLUP~~ALUCP. The three sets of criteria are to be used in combination, with the most restrictive requirement controlling on any given property.

A proposed local agency land use policy or development action must be compatible with each of these elements for the Airport Land Use Commission (the C/CAG Board) to determine that the proposed action is consistent with the ~~CLUP~~ALUCP. If a proposed action is incompatible with any of these criteria, the Airport Land Use Commission (the C/CAG Board) shall determine that the proposed action is inconsistent with the ~~CLUP~~ALUCP.

4.2 Airport Influence Area (AIA)

The AIA for SFO includes two parts: Area A and Area B. Area A is the larger of the two areas and encompasses parts of San Mateo County ~~that are~~ subject to regular overflights by aircraft using SFO. Area B lies within Area A and includes land exposed to aircraft noise above CNEL 65 dB or lying below ~~within~~ critical airspace. ~~the outer boundary of the FAR Part 77 conical surface.~~

Area A, depicted on **Exhibit IV-1**, ~~is defined by~~includes the area overflown ~~an average of~~ at least once per day at altitudes of ~~10~~6,000 feet or less above mean sea level (MSL) by aircraft flying to and from SFO. Area A follows the San Francisco County line on the north, the Area B boundary on the west to U.S. Highway 101, then south to the Woodside Expressway, then west to Interstate 280, then south to the Santa Clara County line, then east to the Bay.

~~**Exhibit IV-1** depicts the~~ The flight track density pattern on Exhibit IV-1 indicates the number of flights at altitudes of 6,000 feet or lower that passed over each cell in a grid network plotted throughout the Bay Area. Each cell is 100 meters square. The flight track densities depicted on the exhibit range from 366 to 18,250 – an average of 1 to 50 per day. ~~density of flight tracks over the Bay Area for all flights to and from SFO in 2007~~. The local terrain and the high volume of air traffic impose strict limits on the design and use of the airspace in the area. Thus, the overall pattern of aircraft approaches and departures at SFO is unlikely to change substantially over time. In fact, this flight track density pattern has remained essentially the same for years.[1] ~~Exhibit IV-1 also depicts the proposed boundary for Area A. The boundary generally corresponds to the area within San Mateo County overflown by 366 or more flights per year. It has been adjusted to follow major roads, section lines, and rancho lines to make it easier to identify and implement.~~

Area B of the AIA, depicted on **Exhibit IV-2**, is based on a combination of the outer boundaries of the noise compatibility and safety zones, the 14 CFR ~~outer boundary of the FAR~~ Part 77 conical surface, ~~and the outer noise compatibility planning noise contour~~and the TERPS approach and One-Engine Inoperative (OEI) departure surfaces.[2] As depicted on Exhibit IV-2, the Area B boundary has been adjusted to follow streets, highways, and corporate boundaries to make it easier to identify and implement. See **Exhibit IV-3** for a close-up view of the northwestern half of Area B and **Exhibit IV-4** for a close-up view of the southeastern half.

The following AIA policies (IP) shall apply to the ~~CLUP~~ALUCP.

IP-1 AIRPORT INFLUENCE AREA A – REAL ESTATE DISCLOSURE AREA

Within Area A, the real estate disclosure requirements of state law apply. Section 11010 of the Business and Professions Code requires people offering subdivided property for sale or lease to disclose the presence of all existing and planned airports within two miles of the property.[3] The law requires that, if the property is within an "airport influence area" designated by the airport land use commission, the

[1] As part of this analysis, flight track densities for 1999 and 2007 were also examined. The patterns were~~as~~ substantially the same as shown on Exhibit IV-1.

[2] On the northwest side, the Area B boundary corresponds to the 800-foot elevation line of the TERPS approach surface and the OEI departure surface. On the southeast side, the Area B boundary corresponds with the transitional surfaces rising from the flat surface with an elevation of 210 feet MSL. See Exhibits IV-17 and IV-18 for a detailed depiction of the airspace surfaces.

[3] California Business and Professions Code, Section 11010(b)(13).

following statement must be included in the notice of intention to offer the property for sale:

NOTICE OF AIRPORT IN VICINITY

This property is presently located in the vicinity of an airport, within what is known as an airport influence area. For that reason, the property may be subject to some of the annoyances or inconveniences associated with proximity to airport operations (for example: noise, vibration, or odors). Individual sensitivities to those annoyances can vary from person to person. You may wish to consider what airport annoyances, if any, are associated with the property before you complete your purchase and determine whether they are acceptable to you.

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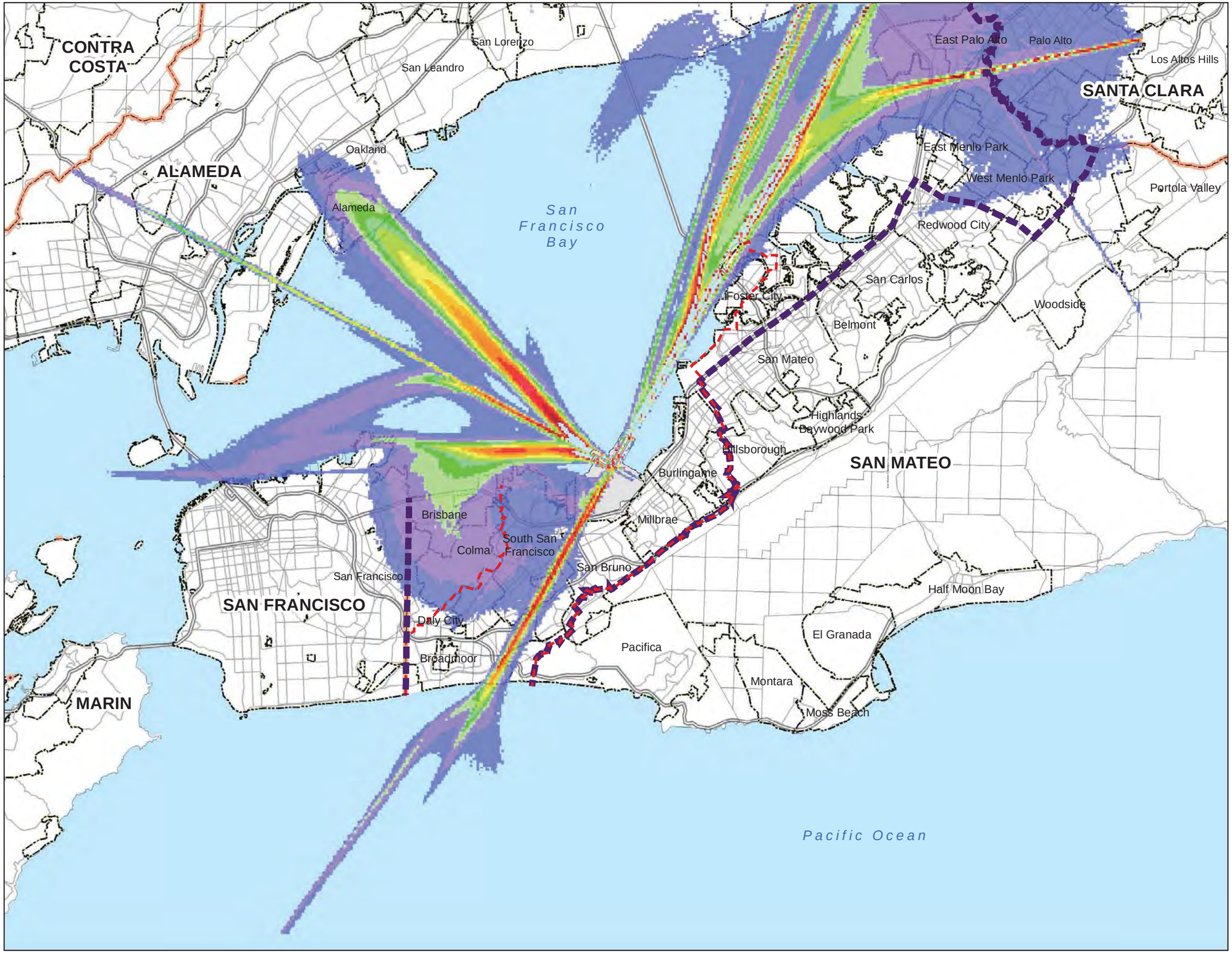

LEGEND

- Boundary for Airport Influence Area A
- Boundary for Airport Influence Area B
- County Boundary
- City Boundary
- Range/ Township/ Section and Rancho Lines
- Freeways
- Roads

Flight Track Density

- 366-730
- 731-1,460
- 1,461-2,190
- 2,191-2,920
- 2,921-3,650
- 3,651-5,110
- 5,111-6,570
- 6,571-8,030
- 8,031-9,490
- 9,491-10,950
- 10,951-12,410
- 12,411-13,870
- 13,871-15,330
- 15,331-16,790
- 16,791-18,250

Note: Density is calculated as the number of flight tracks passing over each cell in a grid with cells of 100 meters square. Data includes only flights to and from San Francisco International Airport at or below 6,000 feet above mean sea level (MSL) during all of calendar year 2011.

Source: SFO Noise Office, May 2012.

NORTH

0 0.75 1.5 3 Miles

Exhibit IV-1

AIRPORT INFLUENCE AREA A - REAL ESTATE DISCLOSURE AREA

Comprehensive Airport Land Use Plan
For The Environs of San Francisco International Airport

C/CAG

City/County Association of Governments
of San Mateo County, California

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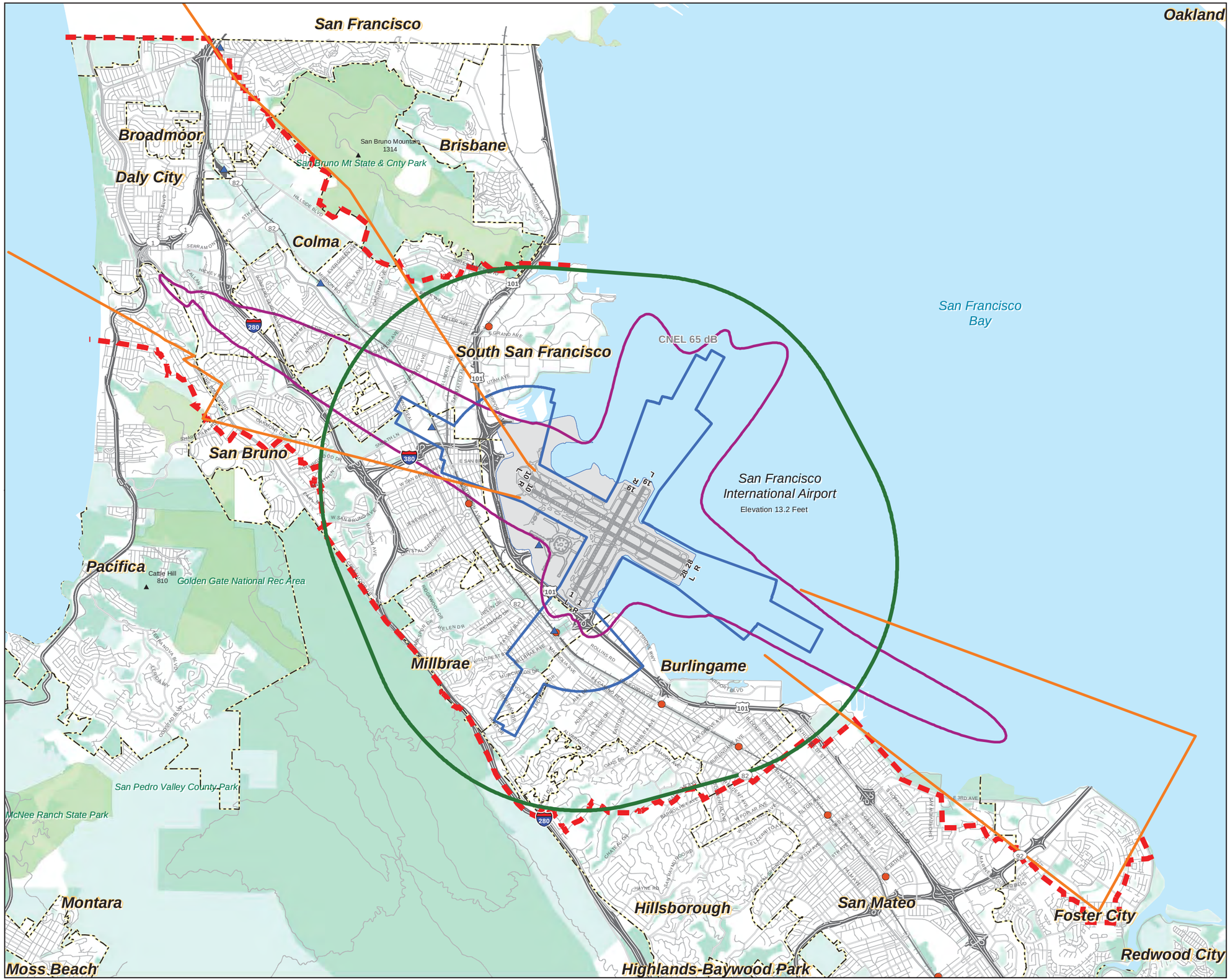

LEGEND

- Boundary for Airport Influence Area B
- Outer Boundary of Safety Zones
- CNEL Contour, 2020 Forecast
- 14 CFR Part 77 Conical Surface
- Outer Boundary of TERPS Approach and OEI Departure Surfaces
- Airport Property
- BART Station
- CALTRAIN Station
- Municipal Boundary
- Railroad
- Freeway
- Road
- Local Park, Golf Course, Cemetery
- Regional Park or Recreation Area
- Open Space

Sources:

100:1 FAA Notification Zone: Ricondo & Associates, Inc. and Jacobs Consultancy, based on 14 CFR Part 77, Subpart B, Section 77.9.

Outer Boundary of TERPS Approach and OEI Departure Surfaces: San Francisco International Airport, Jacobs Consultancy, and Planning Technology Inc., 2009

Safety Compatibility Zones: Jacobs Consultancy Team, 2009; Ricondo & Associates, Inc., 2011

Noise Contour: URS Corporation and BridgeNet International. Draft Environmental Assessment, San Francisco International Airport Proposed Runway Safety Area Program, June 2011

NORTH

0 0.325 0.65 1.3 Miles

Exhibit IV-2

AIRPORT INFLUENCE AREA B --
LAND USE POLICY ACTION/PROJECT REFERRAL AREA

Comprehensive Airport Land Use Plan
for the Environs of San Francisco International Airport

C/CAG

City/County Association of Governments
of San Mateo County, California

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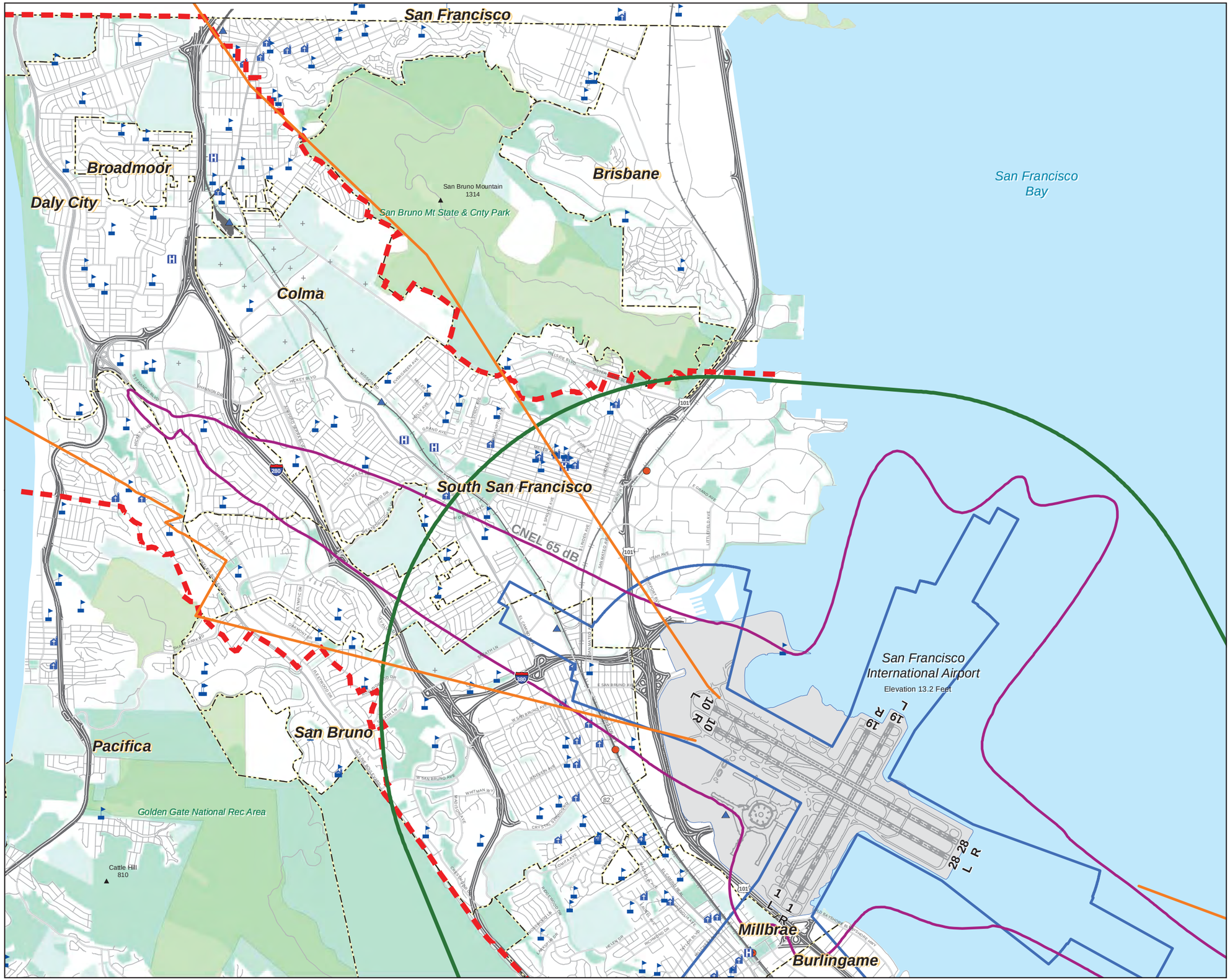

LEGEND

- Boundary for Airport Influence Area B
- Outer Boundary of Safety Zones
- CNEL Contour, 2020 Forecast
- 14 CFR Part 77 Conical Surface
- Outer Boundary of TERPS Approach and OEI Departure Surfaces
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Safety Compatibility Zones: Jacobs Consultancy Team, 2009; Ricondo & Associates, Inc., 2011

Noise Contour: URS Corporation and BridgeNet International. Draft Environmental Assessment, San Francisco International Airport Proposed Runway Safety Area Program, June 2011

NORTH

0 0.2 0.4 0.8 Miles

Exhibit IV-3

AIRPORT INFLUENCE AREA B -- NORTH SIDE

Comprehensive Airport Land Use Plan for the Environs of San Francisco International Airport

C/CAG

City/County Association of Governments of San Mateo County, California

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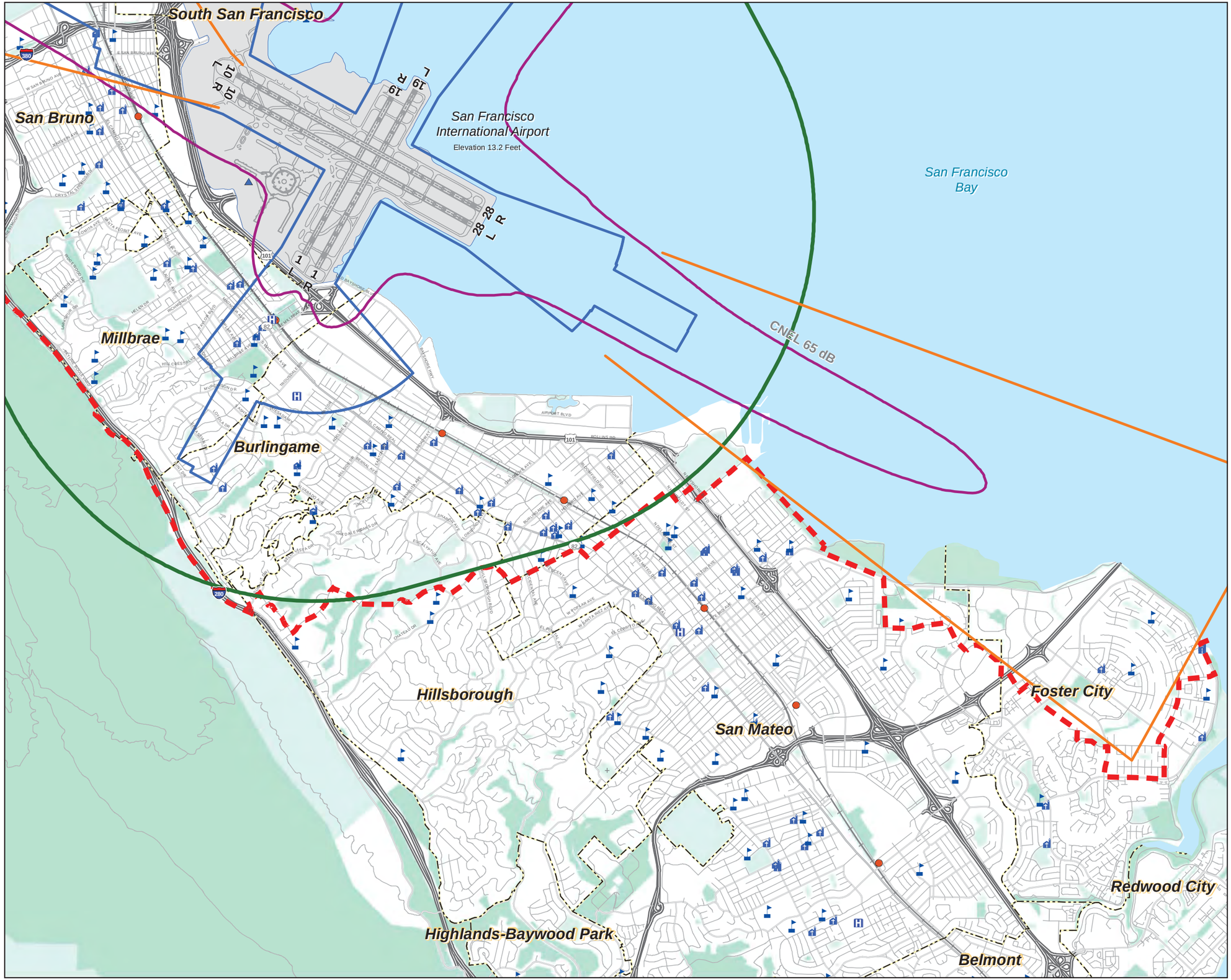

LEGEND

- Boundary for Airport Influence Area B
- Outer Boundary of Safety Zones
- CNEL Contour, 2020 Forecast
- 14 CFR Part 77 Conical Surface
- Outer Boundary of TERPS Approach and OEI Departure Surfaces
- Airport Property
- BART Station
- CALTRAIN Station
- Municipal Boundary
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- Local Park, Golf Course, Cemetery
- Regional Park or Recreation Area
- Open Space

Sources:

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Outer Boundary of TERPS Approach and OEI Departure Surfaces: San Francisco International Airport, Jacobs Consultancy, and Planning Technology Inc., 2009

Safety Compatibility Zones: Jacobs Consultancy Team, 2009; Ricondo & Associates, Inc., 2011

Noise Contour: URS Corporation and BridgeNet International. Draft Environmental Assessment, San Francisco International Airport Proposed Runway Safety Area Program, June 2011

NORTH

0 0.2 0.4 0.8 Miles

Exhibit IV-4

AIRPORT INFLUENCE AREA B -- SOUTHEAST SIDE

Comprehensive Airport Land Use Plan for the Environs of San Francisco International Airport

C/CAG

City/County Association of Governments of San Mateo County, California

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IP-2 AIRPORT INFLUENCE AREA B – POLICY/PROJECT REFERRAL AREA

Within Area B, the Airport Land Use Commission (the C/CAG Board) shall exercise its statutory duties to review proposed land use policy actions, including new general plans, specific plans, zoning ordinances, plan amendments and rezonings, and related land development proposals. The real estate disclosure requirements in Area A also apply in Area B. Portions of unincorporated San Mateo County and the following municipalities are located within Area B:

- Daly City – small part of the city in the Serramonte area
- South San Francisco – all but north and west sides of the city
- San Bruno – all but northwest corner of the city
- Millbrae – all of the city
- Burlingame – all of the city
- Hillsborough – the northern part of the town, north of Chateau Drive
- Unincorporated San Mateo County: California Golf Club, Country Club Park, Burlingame Hills, and San Francisco International Airport

The following special districts are located within Area B of the AIA:

- North San Mateo County Sanitation District
- Peninsula Health Care District
- San Mateo County Flood Control District
- San Mateo County Harbor District
- San Mateo County Mosquito & Vector Control District
- Westborough County Water District

The following school districts and community college district are located within Area B:

- Burlingame School District
- Hillsborough City Elementary School District
- Jefferson Union High School District
- Millbrae Elementary School District
- San Bruno Park Elementary School District
- San Mateo County Community College District
- San Mateo Foster City Elementary School District
- San Mateo Union High School District
- South San Francisco Unified School District

4.3 Noise Compatibility Policies

The airport noise compatibility policies described in this section have a two-fold purpose:

1. To protect the public health, safety, and welfare by minimizing the exposure of residents and occupants of future noise-sensitive development to excessive noise.

2. To protect the public interest in providing for the orderly development of SFO by ensuring that new development in the Airport environs complies with all requirements necessary to ensure compatibility with aircraft noise in the area. The intent is to avoid the introduction of new incompatible land uses into the Airport's "noise impact area" so that the Airport will continue to be in compliance with the State Noise Standards for airports (California Code of Regulations, Title 21, Sections 5012 and 5014).[4]

The following noise compatibility policies (NP) shall apply to the ~~CLUP~~ALUCP.

NP-1 NOISE COMPATIBILITY ZONES

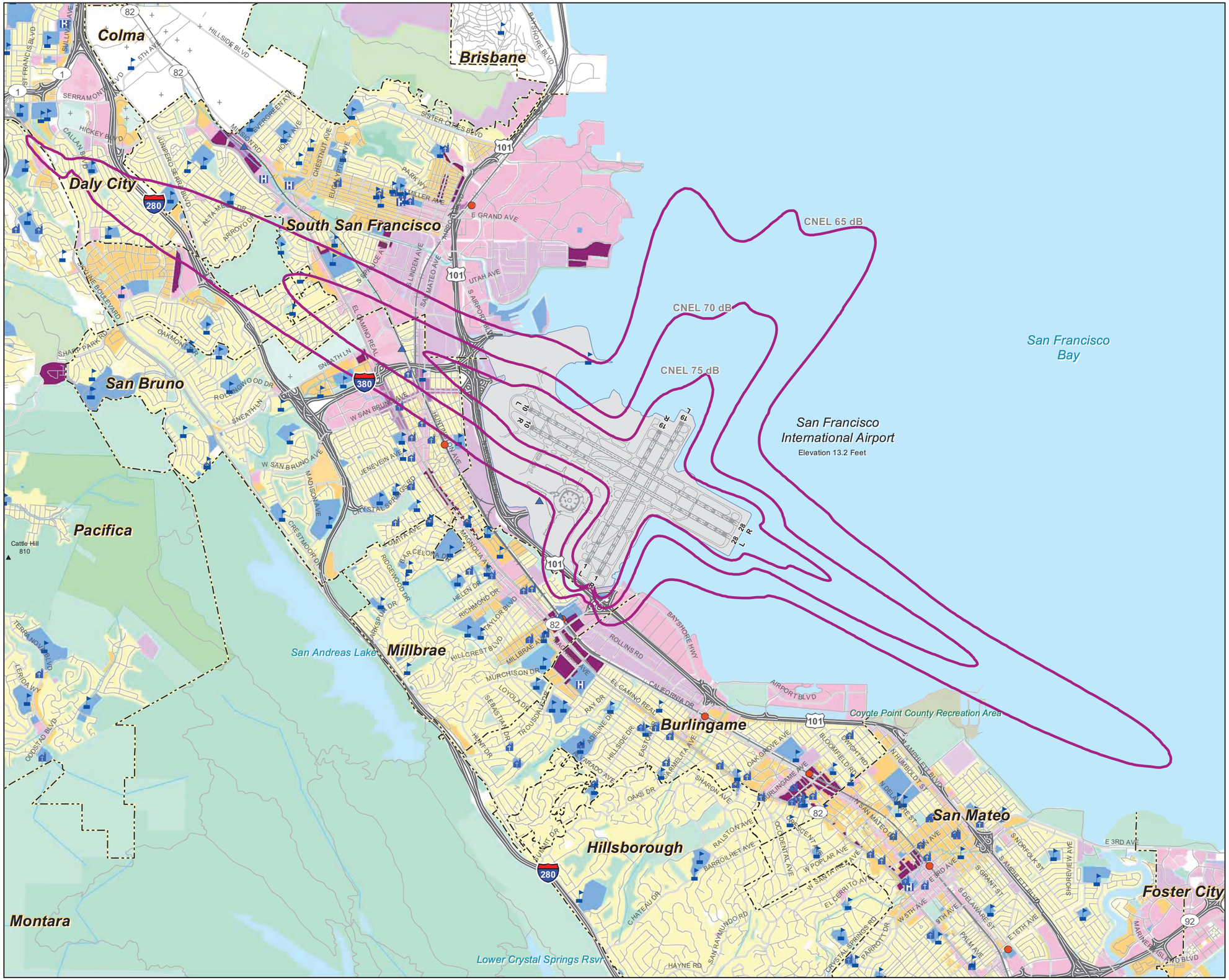
For the purposes of this ~~CLUP~~ALUCP, the projected 2020 CNEL noise contour map from the Draft Environmental Assessment for the Proposed Runway Safety Area Program shall define the boundaries within which noise compatibility policies described in this Section shall apply.[5] **Exhibit IV-5** depicts the noise compatibility zones. More detail is provided on **Exhibit IV-6**. The zones are defined by the CNEL 65, 70 and 75 dB contours.

The CNEL noise contours presented in Exhibit IV-6 designate the area where noise exposure is great enough to warrant land use controls to promote noise compatibility. It is acknowledged that aircraft noise at levels below CNEL 65 dB can be disturbing to some people.

Although the contours were established using the best available information at the time, noise contours are subject to changes that can be difficult to predict over long periods of time. The primary causes of change in the noise contours at SFO are most likely to be changes in the numbers of operations (arrivals and departures) and in the mix of aircraft using the airport. The patterns of runway use and flight tracks are unlikely to change substantially due to the nature of local weather patterns, topography, and the presence of other airports and air traffic in the metropolitan area.

[4] In 2002, the San Mateo County Board of Supervisors declared that the Airport had eliminated its "noise impact area," as defined under state law -- California Code of Regulations, Title 21, Sections 5012 and 5014.

[5] URS Corporation and BridgeNet International. *Draft Environmental Assessment, Proposed Runway Safety Area Program, San Francisco International Airport*, June 2011.



LEGEND

- CNEL Contour, 2020 Forecast
- Airport Property
- BART Station
- CALTRAIN Station
- School
- Place of Worship
- Hospital
- Municipal Boundary
- Railroad
- Freeway
- Road

Planned Land Use Per General Plans:

- Public
- Multi-Family Residential
- Single Family Residential
- Mixed Use
- Transit Oriented Development
- Commercial
- Industrial, Transportation, and Utilities
- Local Park, Golf Course, Cemetery
- Regional Park or Recreation Area
- Open Space
- Planned use not mapped

Sources:

Noise Contour Data:
- Draft Environmental Assessment, Proposed Runway Safety Area Program, San Francisco International Airport. URS Corporation and BridgeNet International, June 2011

County Base Maps:
- San Mateo County Planning & Building Department, 2007

Local Plans:
- Burlingame Bayfront Specific Area Plan, August 2006
- Burlingame Downtown Specific Plan, January 2009
- Burlingame General Map, September 1984
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- Colma Municipal Code Zoning Maps, December 2003
- Daly City General Plan Land Use Map, 1987
- Hillsborough General Plan, March 2005
- Millbrae Land Use Plan, November 1998
- Pacifica General Plan, August 1996
- San Bruno General Plan, December 2008
- San Mateo City Land Use Plan, March 2007
- San Mateo County Zoning Map, 1992
- South San Francisco General Plan, 1998

NORTH

0 0.275 0.55 1.1 Miles

Exhibit IV-5
NOISE COMPATIBILITY ZONES
Comprehensive Airport Land Use Plan
for the Environs of San Francisco International Airport

C/CAG
City/County Association of Governments
of San Mateo County, California

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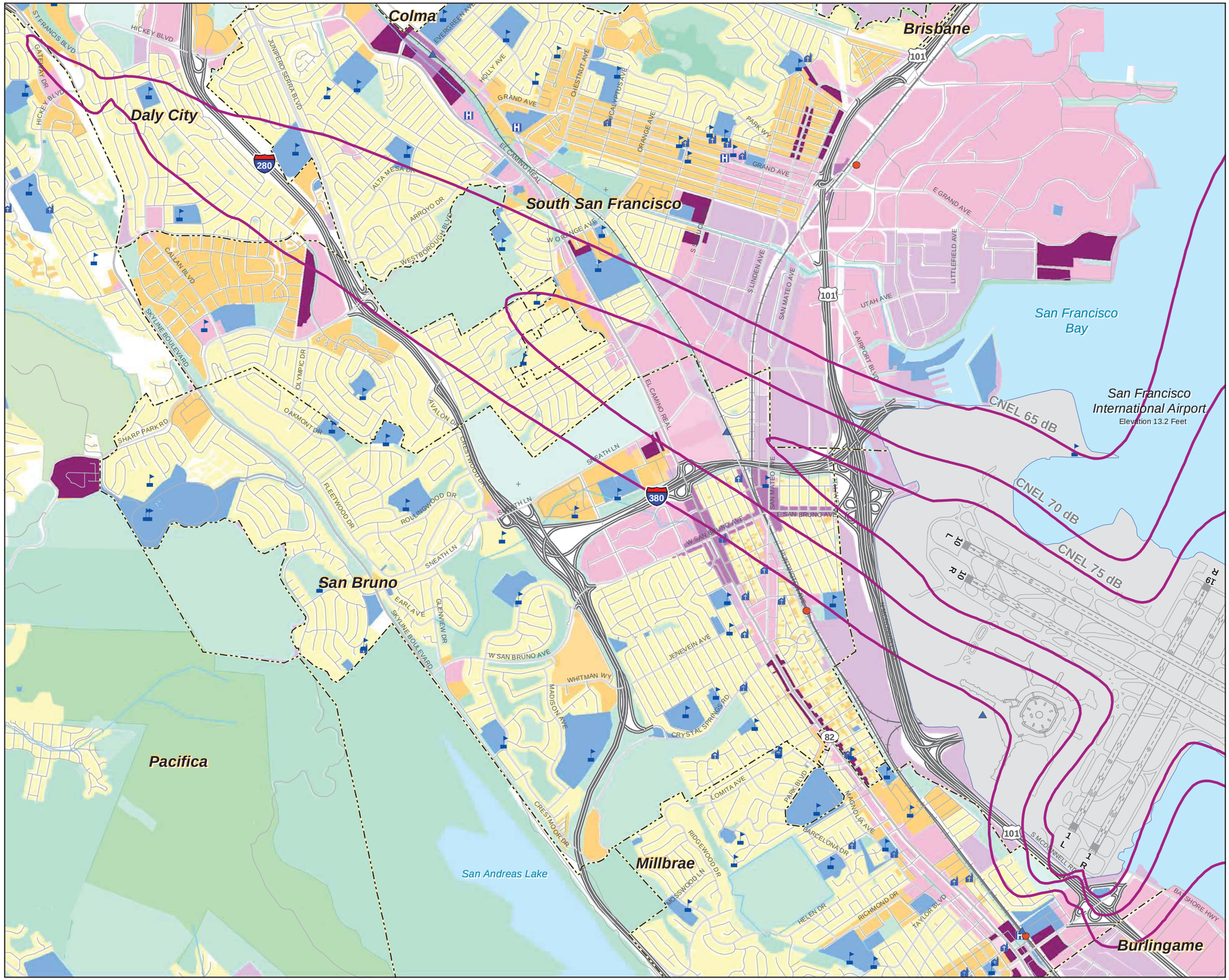

LEGEND

- CNEL Contour, 2020 Forecast
- Airport Property
- BART Station
- CALTRAIN Station
- School
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- Hospital
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- Railroad
- Freeway
- Road

Planned Land Use Per General Plans:

- Public
- Multi-Family Residential
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- Mixed Use
- Transit Oriented Development
- Commercial
- Industrial, Transportation, and Utilities
- Local Park, Golf Course, Cemetery
- Regional Park or Recreation Area
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Noise Contour Data:
- Draft Environmental Assessment, Proposed Runway Safety Area Program, San Francisco International Airport. URS Corporation and BridgeNet International, June 2011

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- Pacifica General Plan, August 1996
- San Bruno General Plan, December 2008
- San Mateo City Land Use Plan, March 2007
- San Mateo County Zoning Map, 1992
- South San Francisco General Plan, 1998

NORTH

0 0.1 0.2 0.4 Miles

Exhibit IV-6

NOISE COMPATIBILITY ZONES -- DETAIL

Comprehensive Airport Land Use Plan
for the Environs of San Francisco International Airport

C/CAG

City/County Association of Governments
of San Mateo County, California

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NP-2 AIRPORT NOISE/LAND USE COMPATIBILITY CRITERIA

The compatibility of proposed land uses located in the Airport noise compatibility zones shall be determined according ~~conform~~ to the noise/land use compatibility criteria shown in **Table IV-1**. The criteria indicate the maximum acceptable airport noise levels, described in terms of Community Noise Equivalent Level (CNEL), for the indicated land uses. The compatibility criteria indicate whether a proposed land use is "compatible," "conditionally compatible," or "not compatible" within each zone, designated by the identified CNEL ranges.

- "Compatible" shall mean that the proposed land use is compatible with the CNEL level indicated in the table and may~~shall~~ be permitted without any special requirements related to the attenuation of aircraft noise.
- "Conditionally compatible" shall mean that the proposed land use is compatible if ~~, subject to~~ the conditions described~~indicated~~ in Table IV-1~~, and that it shall be permitted if the required conditions~~ are met.
- "Not compatible" shall mean that the proposed land use is incompatible with aircraft noise at the indicated CNEL level~~, and shall not be permitted.~~

NP-3 GRANT OF AVIGATION EASEMENT

Any action that would either permit or result in the development or construction of a land use considered to be conditionally compatible with aircraft noise in a range of CNEL 65 dB or greater shall be subject to this easement requirement. The determination of conditional compatibility shall be based on the criteria presented in Table IV-1 "Noise/Land Use Compatibility Criteria."

The San Mateo County Airport Land Use Commission (the C/CAG Board) deems it necessary to: (1) ensure the unimpeded use of airspace in the vicinity of SFO; (2) to ensure that new noise-sensitive land uses within the CNEL 65 dB contour are made compatible with aircraft noise, in accordance with California Code of Regulations, Title 21, Section 5014; and (3~~2~~) to provide notice to owners of real property near the Airport of the proximity to SFO and of the potential impacts that could occur on the property from airport/aircraft operations. Thus, C/CAG shall condition its approval of proposed development upon the owner of the subject property granting an avigation easement to the City and County of San Francisco, as the proprietor of SFO. The local government with the ultimate permitting and approval authority over the proposed development shall ensure that this condition is implemented prior to final approval of the proposed development. If the approval action for the proposed development includes construction of a building(s) and/or other structures, the local permitting authority shall require the grant of an avigation easement to the City and County of San Francisco prior to issuance of a building permit(s) for the proposed building or structure. If the proposed development is not built, then, upon notice by the local permitting authority, SFO will revoke the avigation easement.

The avigation easement to be used in fulfilling this condition is presented in **Appendix G**.

NP-4 RESIDENTIAL USES WITHIN CNEL 70 dB CONTOUR

As described in Table IV-1, residential uses are not compatible in areas exposed to noise above CNEL 70 dB. Residential uses may be considered conditionally compatible in areas exposed to noise above CNEL 70 dB only if the proposed use is on a lot of record zoned for residential use as of the effective date of the ALUCP. In such a case, the residential use must be sound-insulated to achieve an indoor noise level of CNEL 45 dB or less from exterior sources. The property owner also shall grant an avigation easement to the City and County of San Francisco in accordance with Policy NP-3 prior to issuance of a building permit for the proposed building or structure.

Table IV-1 Noise/Land Use Compatibility Criteria

	COMMUNITY NOISE EQUIVALENT LEVEL (CNEL)			
LAND USE	**BELOW 65 dB**	**65-70 dB**	**70-75 dB**	**75 dB AND OVER**
Residential				
Residential, single family detached	Y	C	N *(a)*	N
Residential, multi-family and single family attached	Y	C	N *(a)*	N
Transient lodgings	Y	C	C	N
Public/Institutional				
Public and Private Schools	Y	C	N	N
Hospitals and nursing homes	Y	C	N	N
Places of public assembly, including places of worship	Y	C	N	N
Auditoriums, and concert halls	Y	C	C	N
Libraries	Y	C	C	N
Outdoor music shells, amphitheaters	Y	N	N	N
Recreational				
Outdoor sports arenas and spectator sports	Y	Y ~~*(c)*~~	Y ~~*(c)*~~	N
Nature exhibits and zoos	Y	Y	N	N
Amusements, parks, resorts and camps	Y	Y	Y	N
Golf courses, riding stables, and water recreation	Y	Y	Y	Y
Commercial				
Offices, business and professional, general retail	Y	Y	Y	Y
Wholesale; retail building materials, hardware, farm equipment	Y	Y	Y	Y
Industrial and Production				
Manufacturing	Y	Y	Y	Y
Utilities	Y	Y	Y	Y
Agriculture and forestry	Y	Y *(b)*	Y *(c~~d~~)*	Y *(c~~d~~)*
Mining and fishing, resource production and extraction	Y	Y	Y	Y

Notes:

CNEL = Community Noise Equivalent Level, in A-weighted decibels.

Y (Yes) = Land use and related structures compatible without restrictions.

C (conditionally compatible) = Land use and related structures are permitted, provided that sound insulation is provided to reduce interior noise levels from exterior sources to CNEL 45 dB or lower and that an avigation easement is granted to the City and County of San Francisco as operator of SFO. See Policy NP-3.

N (No) = Land use and related structures are not compatible~~, and are prohibited~~.

(a) Use is conditionally compatible only ~~permitted~~ on an existing lot of record ~~if~~ zoned for residential use as of the effective date of the ALUCP. Use must be sound-insulated to achieve an indoor noise level of CNEL 45 dB or less from exterior sources. The property owners shall grant an avigation easement to the City and County of San Francisco prior to issuance of a building permit~~(s)~~ for the proposed building or structure. If the proposed development is not built, then, upon notice by the local permitting authority, SFO will revoke the avigation easement.

(b) Residential buildings must be sound-insulated to achieve an indoor noise level of CNEL 45 dB or less from exterior sources.

~~*(c)* Land use is compatible provided special sound reinforcement systems are installed.~~

(c~~d~~) Accessory dwelling units are not ~~permitted~~compatible.

SOURCES: Jacobs Consultancy Team 2010. Based on State of California General Plan Guidelines for noise elements of general plans; California Code of Regulations, Title 21, Division 2.5, Chapter 6, Section 5006; and 14 CFR Part 150, Appendix A, Table 1.

PREPARED BY; Ricondo & Associates, Inc., ~~February~~ March 2012.

4.4 Safety Compatibility Policies

The safety compatibility policies are established with a twofold purpose:

1. To protect the public health, safety, and welfare by minimizing the public's exposure to the risk associated with potential aircraft accidents in the Airport vicinity.
2. To protect the public interest in providing for the orderly development of SFO by preventing the creation of new safety problems in the Airport environs.

Compared to noise, safety is a much more difficult concern to address in airport/land use compatibility policies. A major reason is that safety policies address uncertain events that may occasionally occur with aircraft operations, whereas noise policies deal with known, more or less predictable, events that occur with every aircraft operation.

Because aircraft accidents happen infrequently, and the time, place, and consequences of their occurrence cannot be accurately predicted, the concept of risk is central to the assessment of safety compatibility. In terms of airport/land use compatibility planning, two questions must be addressed to determine the relative degree of risk posed by potential aircraft accidents in various locations:

- Accident Frequency – Where and when do aircraft accidents typically occur in the vicinity of an airport?
- Accident Severity – What aircraft and land use characteristics contribute to the consequences of an accident when one occurs?

The overall objective of safety compatibility guidelines is to minimize the risks associated with potential aircraft accidents. There are two components to this objective:

- Safety of Persons on the Ground – The most fundamental safety compatibility component is to provide for the safety of people and property on the ground in the event of an aircraft accident near an airport.
- Safety of Aircraft Occupants – The other safety compatibility component is to enhance the chances of survival of the occupants of an aircraft involved in an accident that occurs beyond the runway environment.

The guidance in the Caltrans *Airport Land Use Planning Handbook* is based on an analysis of the factors described above.[6] That guidance, however, is highly generalized. To the extent applicable, that guidance has been applied to the SFO vicinity, with adjustments based on the particular operating characteristics of the Airport. The rationale for the definition of safety zones and policies is discussed in **Appendix E** of this ~~CLUP~~ALUCP.

[6] California Department of Transportation, Division of Aeronautics, *California Airport Land Use Planning Handbook*, October 2011, pp. 3-11 – 3-28, 4-13 – 4-34, and Appendices E and F.

The following safety compatibility policies (SP) shall apply to the ~~CLUP~~ALUCP.

SP-1 SAFETY COMPATIBILITY ZONES

Exhibit IV-7 depicts the safety compatibility zones in the vicinity of SFO. ~~Four~~Five zones are established, as follows:

- **Zone 1 -- Runway Protection Zone and Object Free Area (RPZ-OFA):** Zone 1 includes the RPZ and the OFA, areas ~~The RPZ is an area~~ defined according to FAA airport design criteria.[7] The RPZ~~It~~ is a trapezoid-shaped area off each runway end, with the dimensions based on the runway approach visibility minimums and the type of aircraft using the runway. The OFA is a rectangular area centered on each runway within which objects, other than those serving a specific aeronautical purpose, are to be prohibited. Zone 1~~The RPZ~~ is an area of relatively high accident risk that FAA encourages airport proprietors to own and keep free of objects, structures, and incompatible uses, including places of assembly (housing, churches, schools, shopping centers, hospitals, and the like), fuel storage, and wildlife attractants.
- **Zone 2 -- Inner Approach/Departure Zone (IADZ):** Zone 2, the IADZ, is designated along the extended centerline of each runway beginning at the outer edge of the RPZ. It is an area of secondary accident risk that tends to be overflown by most aircraft arrivals and departures off each~~that~~ runway end.
- **Zone 3 -- Inner Turning Zone (ITZ):** Zone 3, the ITZ, lies alongside the RPZ and IADZ. It is an area overflown by aircraft making turns at low altitude immediately after takeoff. It tends to be subject to lower accident risk than the IADZ.
- **Zone 4 -- Outer Approach/Departure Zone (OADZ):** Zone 4, the OADZ, extends along the extended runway centerline immediately beyond the IADZ. It is subject to overflights of aircraft on approach and straight-out departures. At SFO, the OADZ off the west end of Runways 10R-28L and 10L-28R is overflown by a high proportion of departures using Runways 28L and 28R, especially long-haul departures by heavy, wide-body aircraft.
- **Zone 5 – Sideline Zone (SZ):** Zone 5, the SZ, is a rectangular area centered on each runway centerline with a width of 2,000 feet and a length extending 200 feet beyond each runway end. This area is subject to accident risks associated with aircraft losing directional control on takeoff or after landing. At SFO, the SZ is entirely on Airport property.

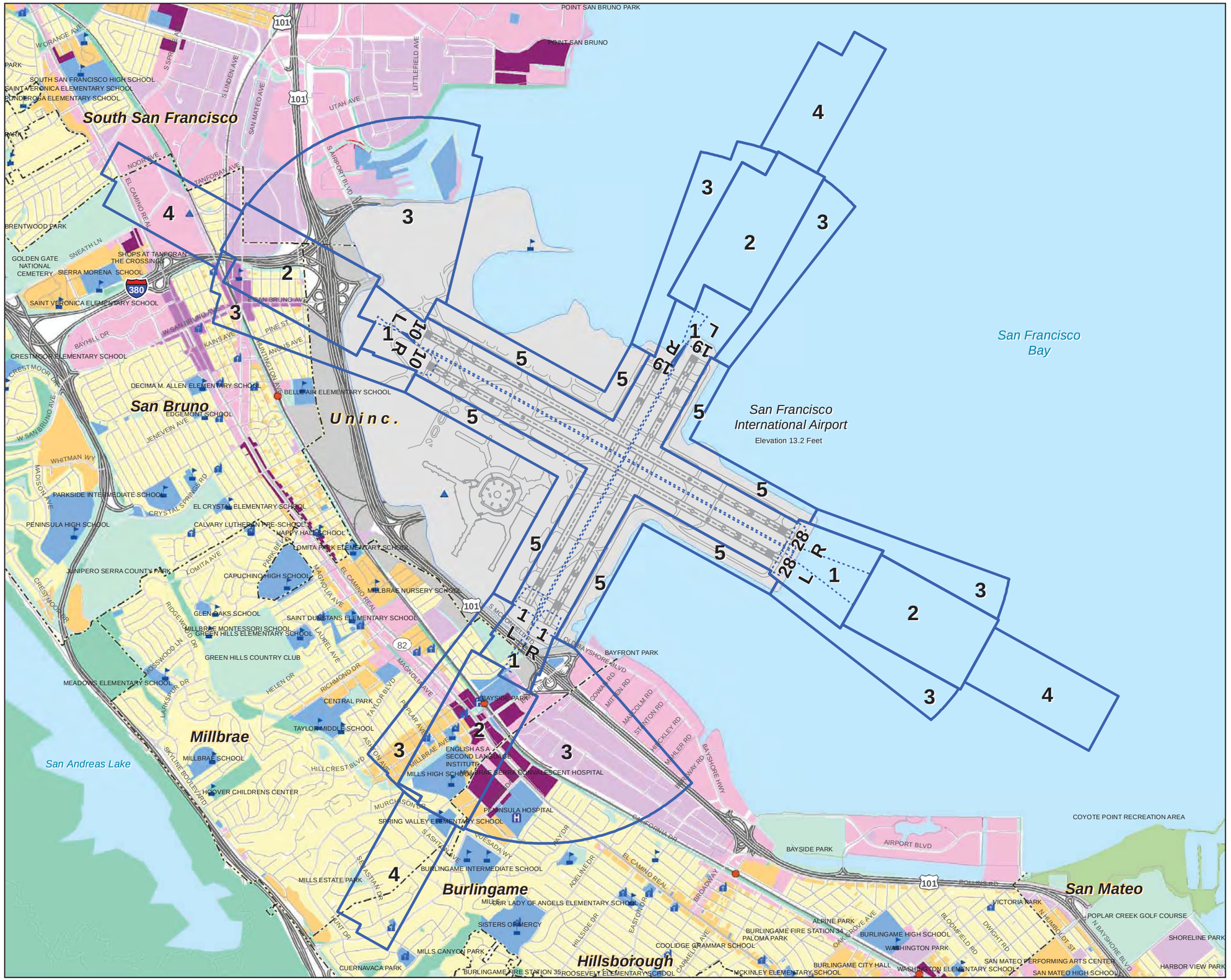
Exhibit IV-8 presents a close-up view of the safety zones off the west end of Runways 10L-28R and 10R-28L. The RPZs have the following dimensions: 500-foot inner width, 1,010-foot outer width, and 1,700-foot length.

[7] FAA Advisory Circular 150/5300-13, Airport Design, Section 211 and 307.

Zone 2 (the IADZ) off each runway extends 4,300 feet beyond the RPZ, with the lateral boundaries extending 750 feet on either side of the extended runway centerline. Zone 4, (the OADZ) extends 4,000 feet beyond Zone 2~~the IADZ~~, with the lateral boundaries extending 500 feet either side of the extended runway centerline.

Zone 3, (the ITZ) extends 6,000 feet from the inner edge of the RPZ on both sides of Zone 2. On the north side, ~~T~~the shape of Zone 3 ~~the ITZ~~ is designed~~intended~~ to capture the area overflown by departures turning right on standard instrument departure routes.[8] ~~covered by right hand departure turns.~~ The eastern boundary follows a radial 75 degrees northeast of the extended runway centerline. ~~Note that no ITZ is on the south side of the extended runway centerline. This is because no aircraft turn over this area (see Appendix E for more discussion of the rationale for the safety zone boundaries).~~

[8] Three published instrument departures at SFO require aircraft using Runways 28L and 28R to turn right immediately after takeoff – the Quiet Two, the Rebas, and the Shoreline One departures. http://www.airnav.com/airport/KSFO, accessed February 20, 2012.



LEGEND

Safety Compatibility Zones

- 1 - Runway Protection Zone-Object Free Area
- 2 - Inner Approach/Departure Zone
- 3 - Inner Turning Zone
- 4 - Outer Approach/Departure Zone
- 5 - Sideline Zonee

Internal boundaries of ALP-defined areas

Airport Property

BART Station

CALTRAIN Station

School

Place of Worship

Hospital

Municipal Boundary

Railroad

Freeway

Road

Planned Land Use Per General Plans:

- Public
- Multi-Family Residential
- Single Family Residential
- Mixed Use
- Transit Oriented Development
- Commercial
- Industrial, Transportation, and Utilities
- Local Park, Golf Course, Cemetery
- Regional Park or Recreation Area
- Open Space
- Planned use not mapped

Sources:

Safety Compatibility Zones:
- Jacobs Consultancy Team, 2009; Ricondo & Associates, Inc., 2011

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Local Plans:
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- Colma Municipal Code Zoning Maps, December 2003
- Daly City General Plan Land Use Map, 1987
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- Millbrae Land Use Plan, November 1998
- Pacifica General Plan, August 1996
- San Bruno General Plan, December 2008
- San Mateo City Land Use Plan, March 2007
- San Mateo County Zoning Map, 1992
- South San Francisco General Plan, 1998

NORTH

0 0.125 0.25 0.5 Miles

Exhibit IV-7
SAFETY COMPATIBILITY ZONES
Comprehensive Airport Land Use Plan
for the Environs of San Francisco International Airport

C/CAG
City/County Association of Governments
of San Mateo County, California

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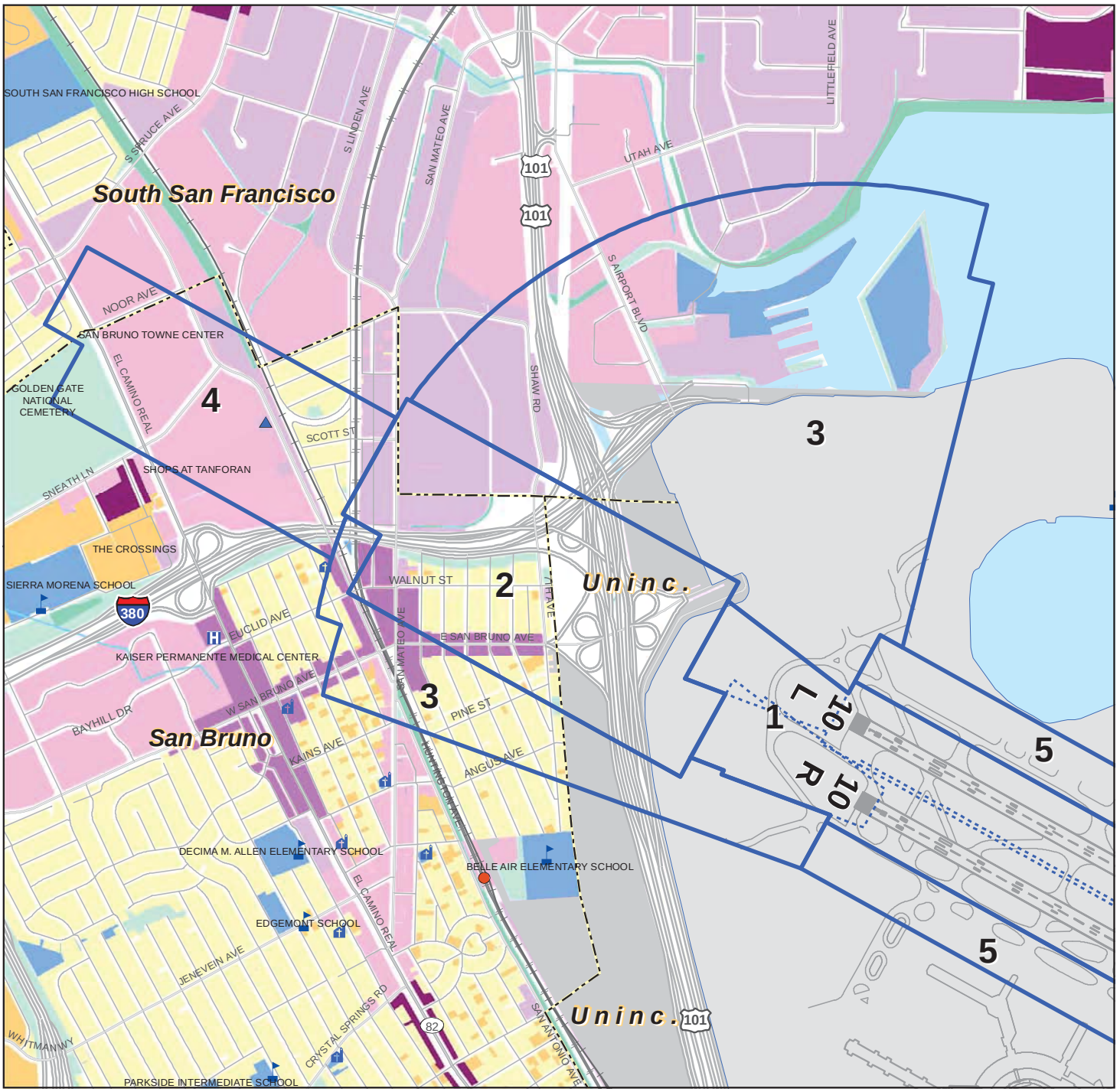

LEGEND

Safety Compatibility Zones

- 1 - Runway Protection Zone-Object Free Area
- 2 - Inner Approach/Departure Zone
- 3 - Inner Turning Zone
- 4 - Outer Approach/Departure Zone
- 5 - Sideline Zones
- Internal boundaries of ALP-defined areas
- Airport Property
- BART Station
- CALTRAIN Station
- School
- Place of Worship
- Hospital
- Municipal Boundary
- Railroad
- Freeway
- Major Road
- Road

Planned Land Use Per General Plans

- Public
- Multi-Family Residential
- Single Family Residential
- Mixed Use
- Transit Oriented Development
- Commercial
- Industrial, Transportation, and Utilities
- Local Park, Golf Course, Cemetery
- Regional Park or Recreation Area
- Open Space

NORTH

0 0.125 0.25 0.5 Miles

Exhibit IV-8

SAFETY COMPATIBILITY ZONES IN THE CITIES OF SOUTH SAN FRANCISCO AND SAN BRUNO

Comprehensive Airport Land Use Plan
for the Environs of San Francisco International Airport

C/CAG

City/County Association of Governments
of San Mateo County, California

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Exhibit IV-9 depicts the safety zones off the south end of Runways 1L-19R and 1R-19L. In Zone 1, the RPZs have a 500-foot inner width, 1,010-foot outer width and 1,700-foot length. Zone 2 (the IADZ) extends 4,300 ~~3,300~~ feet from the outer edge of the RPZ and is ~~1,010~~ 1,500 feet wide, centered on the extended runway centerline. Zone 3 (the ITZ) extends 6,000 ~~5,000~~ feet from the inner edge of each RPZ. On the east side, Zone 3 ~~and~~ is fanned 70 degrees east of the extended runway centerline. This reflects the left departure turns made by nearly all aircraft taking off on Runways 19L and 19R and 19R.[9] Zone 4, the OADZ, extends 4,000 feet beyond the end of Zone 2. ~~off each runway. No ITZ is on the opposite side of the extended runway centerline because no turns are made over that area. Note that no OADZ is defined off the south ends of the runways. This is because that runway end is used very rarely, and all approaches and departures avoid flying over the extended runway centerline because of the high terrain in that area.~~

SP-2 SAFETY COMPATIBILITY LAND USE CRITERIA

The land use compatibility criteria for safety are established in ~~The land uses that would be allowed by proposed land use policy actions affecting real property located within the Airport's safety zones, as defined herein, shall conform to the safety compatibility criteria of~~ **Table IV-2**. The safety compatibility criteria are generally based on the guidelines provided in the *California Airport Land Use Planning Handbook*, although modifications have been made in recognition of the intense level of existing development in the airport vicinity. See Appendix E for a discussion of the factors that were considered in establishing the safety compatibility policies.

The criteria include two categories – uses that are incompatible ~~prohibited~~ and uses that should ~~are to~~ be avoided in the respective zones.

- Incompatible ~~Prohibited~~ Uses – uses that are incompatible within ~~not to be permitted in~~ the safety zone.
- Uses to be Avoided – uses that should not be allowed in the safety zone~~permitted~~ unless no feasible alternative is available, as determined by the land use agency with permitting authority. Where these uses are allowed, habitable structures shall be provided with at least 50 percent more exits than required by applicable codes. If the 50 percent calculation results in a fraction, the fractional number shall be rounded up to the next whole number.

ZONE 1 – RUNWAY PROTECTION ZONE AND OBJECT FREE AREA (RPZ-OFA)

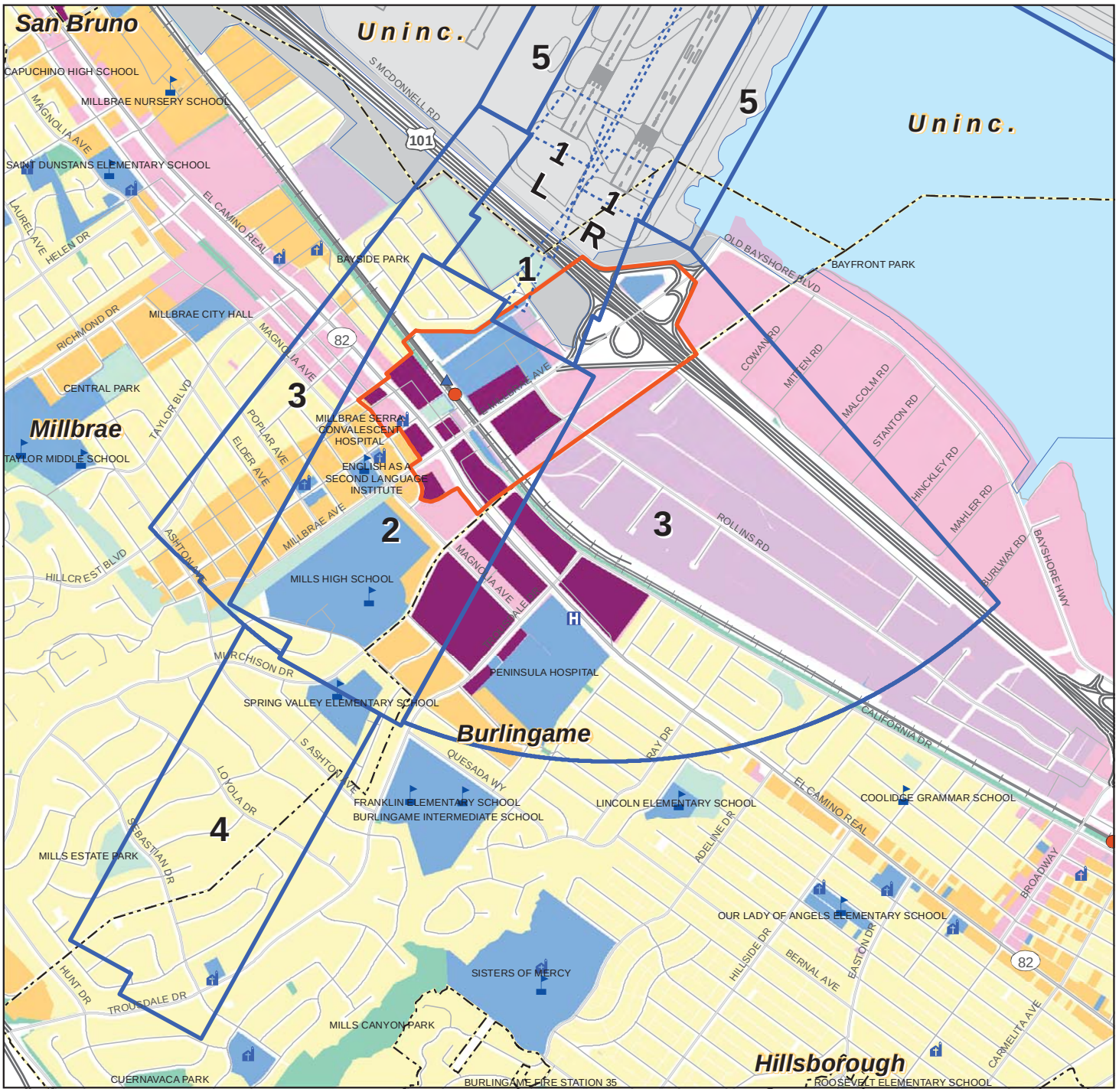
Zone 1~~The RPZ~~ is the zone where the accident risk is highest. At SFO, the RPZs for Runways 10R and 10L are on Airport property or on public highway right-of-way. Most of the RPZs for Runways 1L and 1R are on Airport property or public right-of-way. Part of the RPZs lie in Bayside Park and small areas extend onto private property. All of the OFAs (Object Free Areas) are on Airport property.

[9] All published instrument departure procedures for Runways 19L and 19R require aircraft to turn left immediately after takeoff. http://www.airnav.com/airport/KSFO, accessed February 20, 2012.

The compatibility criteria presented in Table IV-2 ~~prohibit~~ declare that all new structures in Zone 1 are incompatible.~~the RPZs~~. All but very low intensity nonresidential uses, at the outer edges of the RPZs, are to be avoided. Examples of potentially acceptable nonresidential uses include parking lots and outdoor equipment storage.

ZONE 2 -- INNER APPROACH/DEPARTURE ZONE (IADZ)

In Zone 2, the IADZ, a variety of uses ~~are prohibited~~ that involve hazardous materials, critical public utilities, and those accommodating potentially vulnerable populations – such as ~~-~~children's schools, ~~all~~ child day care facilities, hospitals, and nursing homes are incompatible.



LEGEND

Safety Compatibility Zones

- 1 - Runway Protection Zone-Object Free Area
- 2 - Inner Approach/Departure Zone
- 3 - Inner Turning Zone
- 4 - Outer Approach/Departure Zone
- 5 - Sideline Zones
- Internal boundaries of ALP-defined areas
- Millbrae Station Area Specific Plan
- Airport Property
- BART Station
- CALTRAIN Station
- School
- Place of Worship
- Hospital
- Municipal Boundary
- Railroad
- Freeway
- Major Road
- Road

Planned Land Use Per General Plans

- Public
- Multi-Family Residential
- Single Family Residential
- Mixed Use
- Transit Oriented Development
- Commercial
- Industrial, Transportation, and Utilities
- Local Park, Golf Course, Cemetery
- Regional Park or Recreation Area
- Open Space

NORTH

0 0.125 0.25 0.5 Miles

Exhibit IV-9

SAFETY COMPATIBILITY ZONES
IN THE CITIES OF BURLINGAME AND MILLBRAE

Comprehensive Airport Land Use Plan
for the Environs of San Francisco International Airport

C/CAG

City/County Association of Governments
of San Mateo County, California

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Table IV-2 Safety Compatibility Criteria

ZONE	LAND USE CRITERIA	
	~~PROHIBIT~~INCOMPATIBLE[1/]	AVOID[1/]
Zone 1: Runway Protection Zone and Object Free Area (RPZ-OFA)		
	All new structures[3/] Places of assembly not in structures Hazardous uses[2/] Critical public utilities[2/] ~~Wildlife attractants~~	Nonresidential uses except very low intensity uses[4/2/] in the "controlled activity area."[2/]
Zone 2: Inner Approach/Departure Zone (IADZ)		
	Children's schools[2/] Large~~All~~ child day care centers ~~facilities (including family day care homes and noncommercial~~and noncommercial employer-sponsored centers ancillary to a place of business[2/]~~)~~ Hospitals, nursing homes Hazardous uses[2/] Critical public utilities[2/]	---
Zone 3: Inner Turning Zone (ITZ)		
	Biosafety Level 3 and 4 facilities [2/] Children's schools [+2/] Large child day care centers[2/] Hospitals, nursing homes	Hazardous uses other than Biosafety Level 3 and 4 [+]facilities[2/] Critical public utilities[2/]
Zone 4: Outer Approach/Departure Zone (OADZ)		
	Biosafety Level 3 and 4 facilities[2/] Children's schools [+2/] Large child day care centers[2/] Hospitals, nursing homes	Hazardous uses other than Biosafety Level 3 and 4 facilities [2/] Critical public utilities[2/]
Zone 5: Sideline Zone (SZ)		
	Children's schools[2/] Large child day care facilities and noncommercial employer-sponsored centers ancillary to a place of business Hospitals, nursing homes Hazardous uses[2/] Critical public utilities[2/]	---

Notes:

1/ *Avoid:* Use is not fully compatible and should not be permitted unless no feasible alternative is available. Where use is allowed, habitable structures shall be provided with at least 50 percent more exits than required by applicable codes. Where the 50-percent factor results in a fraction, the number of additional exits shall be rounded to the next highest whole number.

~~1~~ *Incompatible* Use is not compatible in the indicated zones and cannot be permitted.

2/ Definitions

~~*Avoid:* Use should not be permitted unless no feasible alternative is available. Where use is allowed, habitable structures shall be provided with at least 50 percent more exits than required by applicable codes.~~

Biosafety Level 3 and 4 facilities: Medical and biological research facilities involving the storage and processing of extremely toxic or infectious agents. See Policy SP-3 for additional detail.

~~*Aboveground bulk storage of fuel:* Tank size greater than 6,000 gallons (based on Uniform Fire Code criteria which are more stringent for larger tanks).~~

Children's schools: Public and private schools serving preschool through grade 12, excluding commercial services.

Controlled Activity Area: The lateral edges of the RPZ, outside the Runway Safety Area (RSA) and the extension of the RSA, which extends to the outer edge of the RPZ. See FAA Advisory Circular 150/5300-13, Airport Design, Section 212a.(1)(b).

Critical public utilities: Facilities that, if disabled by an aircraft accident, could lead to public safety or health emergencies. They ~~Examples~~ include the following: electrical power generation plants, electrical substations, wastewater treatment plants, and public water treatment facilities.

Hazardous uses: Uses involving the manufacture, storage, or processing of flammable, explosive ,or toxic materials that would substantially aggravate the consequences of an aircraft accident. See Policy SP-3 for additional detail. ~~They include manufacturing or storage of large quantities of flammable, explosive, or poisonous materials and aboveground bulk storage of fuel.~~

Large child day care centers: Commercial facilities defined in accordance with Health and Safety Code, Section 1596.70, et seq., and licensed to serve 15 or more children. Family day care homes and noncommercial employer-sponsored facilities ancillary to place of business are allowed.

~~2~~3/ Structures serving specific aeronautical functions are allowed, in compliance with applicable FAA design standards.

4/ Examples include parking lots and outdoor equipment storage.

SOURCE: Ricondo & Associates, Inc., March 2012.
PREPARED BY: Ricondo & Associates, Inc., ~~February~~ March 2012.

ZONE 3 -- INNER TURNING ZONE (ITZ)

The compatibility criteria in Zone 3, the ITZ, are somewhat less restrictive than in Zone 2~~the IADZ~~. This is because the area is subject to less accident risk by virtue of the lower density of overflights in this area. In Zone 3~~the ITZ~~, uses accommodating potentially vulnerable populations are ~~prohibited~~incompatible. Hazardous uses and critical public utilities are not ~~prohibited~~ incompatible in Zone 3~~the ITZ~~, but are classified as uses to be avoided. This means that they should not be permitted unless no feasible alternative is available.

ZONE 4 - OUTER APPROACH/DEPARTURE ZONE (OADZ)

The compatibility criteria in Zone 4,the OADZ, are the same as in Zone 3. ~~the ITZ.~~

ZONE 5 – SIDELINE ZONE (SZ)

The compatibility criteria in Zone 5 are the same as those in Zone 2.

SP-3 HAZARDOUS USES

Hazardous uses, facilities involving the manufacture, processing, or storage of hazardous materials, can pose serious risks to the public in case of aircraft accidents. Hazardous materials of particular concern in this ALUCP, and which are covered by the safety compatibility criteria in Table IV-2, are the following:

A. Aboveground fuel storage — This includes storage tanks with capacities greater than 10,000 gallons of any substance containing at least 5 percent petroleum.[10] Project sponsors must provide evidence of compliance with all applicable regulations prior to the issuance of development permits.

B. Facilities where toxic substances are manufactured, processed or stored — Proposed land use projects involving the manufacture or storage of toxic substances may be allowed if the

[10] State of California, California Health and Safety Code, Section 25270 (*Aboveground Petroleum Storage Act*).

amounts of the substances do not exceed the threshold planning quantities for hazardous and extremely hazardous substances specified by the EPA.[11]

C. Explosives and fireworks manufacturing and storage — Proposed land use projects involving the manufacture or storage of explosive materials may be allowed in safety zones only in compliance with the applicable regulations of the California Division of Occupational Safety and Health (Section 5252, Table EX-1). Project sponsors must provide evidence of compliance with applicable state regulations prior to the issuance of any development permits.[12]

D. Medical and biological research facilities handling highly toxic or infectious agents — These facilities are classified by "Biosafety Levels."[13] Biosafety Level 1 does not involve hazardous materials and is not subject to the restrictions on hazardous uses in Table IV-2. Definitions of the other three biosafety levels are quoted from *Biosafety in Microbiological and Biomedical Laboratories*, below.[14]

a. Biosafety Level 2 practices, equipment, and facility design and construction are applicable to clinical, diagnostic, teaching, and other laboratories in which work is done with the broad spectrum of indigenous moderate-risk agents that are present in the community and associated with human disease of varying severity.

b. Biosafety Level 3 practices, safety equipment, and facility design and construction are applicable to clinical, diagnostic, teaching, research, or production facilities in which work is done with indigenous or exotic agents with a potential for respiratory transmission, and which may cause serious and potentially lethal infection.

c. Biosafety Level 4 practices, safety equipment, and facility design and construction are applicable for work with dangerous and exotic agents that pose a high individual risk of life-threatening disease, which may be transmitted via the aerosol route and for which there is no available vaccine or therapy.

[11] Title 40 Code of Federal Regulations Part 355, Subpart D, Appendices A & B.

[12] California Code of Regulations, Title 8, Subchapter 7 *General Industry Safety Orders*, Group 18 *Explosives and Pyrotechnics*, Article 114 *Storage of Explosives*.

[13] *Biosafety in Microbiological and Biomedical Laboratories*, 5th Edition, 2009, published by the U.S. Department of Health and Human Services in concert with the Public Health Service, Centers for Disease Control and Prevention, and National Institutes of Health, or any successor publication.

[14] *Biosafety in Microbiological and Biomedical Laboratories*, 5th Edition, 2009, published by the U.S. Department of Health and Human Services in concert with the Public Health Service, Centers for Disease Control and Prevention, and National Institutes of Health, pp. 25-26.

4.5 Airspace Protection

The compatibility of proposed land uses with respect to airspace protection shall be evaluated in accordance with the policies set forth in this section. These policies are established with a twofold purpose:

1. To protect the public health, safety, and welfare by minimizing the public's exposure to potential safety hazards that could be created through the construction of tall structures.
2. To protect the public interest in providing for the orderly development of SFO by ensuring that new development in the Airport environs avoids compromising the airspace in the Airport vicinity. This avoids the degradation in the safety, utility, efficiency, and air service capability of the Airport that could be caused by the attendant need to raise visibility minimums, or to cancel, restrict, or redesign flight procedures.

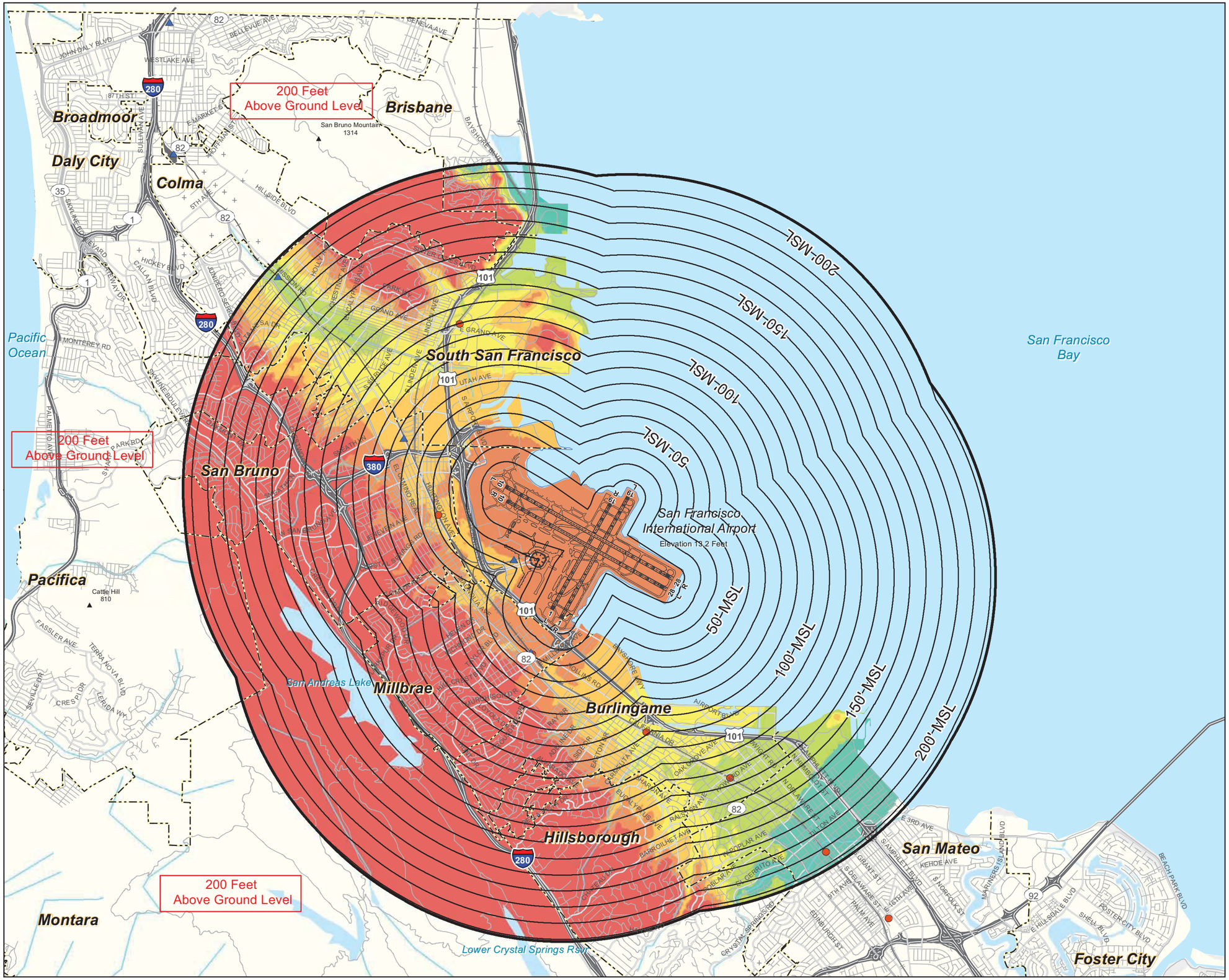
4.5.1 FEDERAL REGULATIONS REGARDING TALL STRUCTURES

14 Code of Federal Regulations (CFR) Part 77, *Safe, Efficient Use and Preservation of the Navigable Airspace*, provides regulations governing the FAA's review of proposed construction exceeding certain height limits, defines airspace obstruction criteria, and provides for FAA aeronautical studies of proposed construction. **Appendix F** describes the FAA airspace review process and the extent of FAA authority related to airspace protection.

4.5.2 PART 77, SUBPART B, NOTIFICATION PROCESS

Federal regulations require any person proposing to build a new structure or alter an existing structure with a height that would exceed the elevations described in CFR Part 77, Subpart B, Section 77.9, to prepare an FAA Form 7460-1, *Notice of Proposed Construction or Alteration*, and submit the notice to the FAA. The regulations apply to buildings and other structures or portions of structures, such as mechanical equipment, flag poles, and other projections that may exceed the aforementioned elevations.

Exhibit IV-10 depicts the approximate elevations at which the 14 CFR Part 77 notification requirements would be triggered; see **Exhibit IV-11** for a close-up view of the northern half and **Exhibit IV-12** for a close-up view of the southern half of the area. These exhibits are provided for informational purposes only. Official determinations of the areas and elevations within which the federal notification requirements apply are subject to the authority of the FAA.



FAA NOTIFICATION REQUIREMENTS

A structure proponent must file FAA Form 7460-1, Notice of Proposed Construction or Alteration, for any proposed construction or alteration that meets any of the following Notification Criteria described in 14 CFR Part 77.9:

§77.9(a) - A height more than 200 feet above ground level (AGL) at its site;

§77.9(b) - Within 20,000 feet of a runway more than 3,200 feet in length, and exceeding a 100:1 slope imaginary surface (i.e., a surface rising 1 foot vertically for every 100 feet horizontally) from the nearest point of the nearest runway. The 100:1 surface is shown as follows:

20,000 Feet Limit From Nearest Runway

100 Elevation Above Mean Sea Level

Heights of 100:1 Surface Above Ground (AGL)

- Terrain Penetrations of Airspace Surface
- Less than 30
- 30-65
- 65-100
- 100-150
- 150-200
- 200 and more

§77.9(c) - Roadways, railroads, and waterways are evaluated based on heights above surface providing for vehicles; by specified amounts or by the height of the highest mobile object normally traversing the transportation corridor;

§77.9(d) - Any construction or alteration on any public-use or military airport (or heliport).

Structure proponents or their representatives may file via traditional paper forms via US mail, or online at the FAA's OE/AAA website, http://oeaaa.faa.gov

LEGEND

- BART Station
- CALTRAIN Station
- Municipal Boundary
- Railroad
- Freeway
- Road

Note:

Per CFR Part 77, developers proposing structures taller than the indicated elevations must file Form 7460-1 with the FAA at least 30 days before the proposed construction. However, due to local requirements for a favorable FAA determination as a contingency for project approval, it is advisable to file the Form 7460-1 as soon as possible because the FAA can take several months to undertake aeronautical reviews.

Source:

Ricondo & Associates, Inc. and Jacobs Consultancy, based on 14 CFR Part 77, Subpart B, Section 77.9.

NORTH

0 0.3 0.6 1.2 Miles

Exhibit IV-10

FAA NOTIFICATION FORM 7460-1 FILING REQUIREMENTS

Comprehensive Airport Land Use Plan
for the Environs of San Francisco International Airport

C/CAG

City/County Association of Governments
of San Mateo County, California

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200 Feet
Above Ground Level

Colma

Daly City

Brisbane

South San Francisco

San Bruno

Pacifica

Millbrae

Burlingame

San Francisco Bay

San Andreas Lake

200'-MSL

150'-MSL

100'-MSL

50'-MSL

San Francisco International Airport
Elevation 13.2 Feet

Elevation 5'
Elevation 6'
Elevation 9'
Elevation 10'
Elevation 10'
Elevation 13'
Elevation 13'
Elevation 11'

200 Feet
Above Ground Level

FAA NOTIFICATION REQUIREMENTS

A structure proponent must file FAA Form 7460-1, Notice of Proposed Construction or Alteration, for any proposed construction or alteration that meets any of the following Notification Criteria described in 14 CFR Part 77.9:

§77.9(a) - A height more than 200 feet above ground level (AGL) at its site;

§77.9(b) - Within 20,000 feet of a runway more than 3,200 feet in length, and exceeding a 100:1 slope imaginary surface (i.e., a surface rising 1 foot vertically for every 100 feet horizontally) from the nearest point of the nearest runway. The 100:1 surface is shown as follows:

20,000 Feet Limit From Nearest Runway

100 Elevation Above Mean Sea Level

Heights of 100:1 Surface Above Ground (AGL)

- Terrain Penetrations of Airspace Surface
- Less than 30
- 30-65
- 65-100
- 100-150
- 150-200
- 200 and more

§77.9(c) - Roadways, railroads, and waterways are evaluated based on heights above surface providing for vehicles; by specified amounts or by the height of the highest mobile object normally traversing the transportation corridor;

§77.9(d) - Any construction or alteration on any public-use or military airport (or heliport).

Structure proponents or their representatives may file via traditional paper forms via US mail, or online at the FAA's OE/AAA website, http://oeaaa.faa.gov

LEGEND

- BART Station
- CALTRAIN Station
- Municipal Boundary
- Railroad
- Freeway
- Road

Note:

Per 14 CFR Part 77, developers proposing structures taller than the indicated elevations must file Form 7460-1 with the FAA at least 30 days before the proposed construction. However, due to local requirements for a favorable FAA determination as a contingency for project approval, it is advisable to file the Form 7460-1 as soon as possible because the FAA can take several months to undertake aeronautical reviews.

Source:

Ricondo & Associates, Inc. and Jacobs Consultancy, based on 14 CFR Part 77, Subpart B, Section 77.9.

NORTH

0 0.15 0.3 0.6 Miles

Exhibit IV-11
FAA NOTIFICATION FORM 7460-1
FILING REQUIREMENTS -- NORTH SIDE
Comprehensive Airport Land Use Plan
for the Environs of San Francisco International Airport

C/CAG
City/County Association of Governments
of San Mateo County, California

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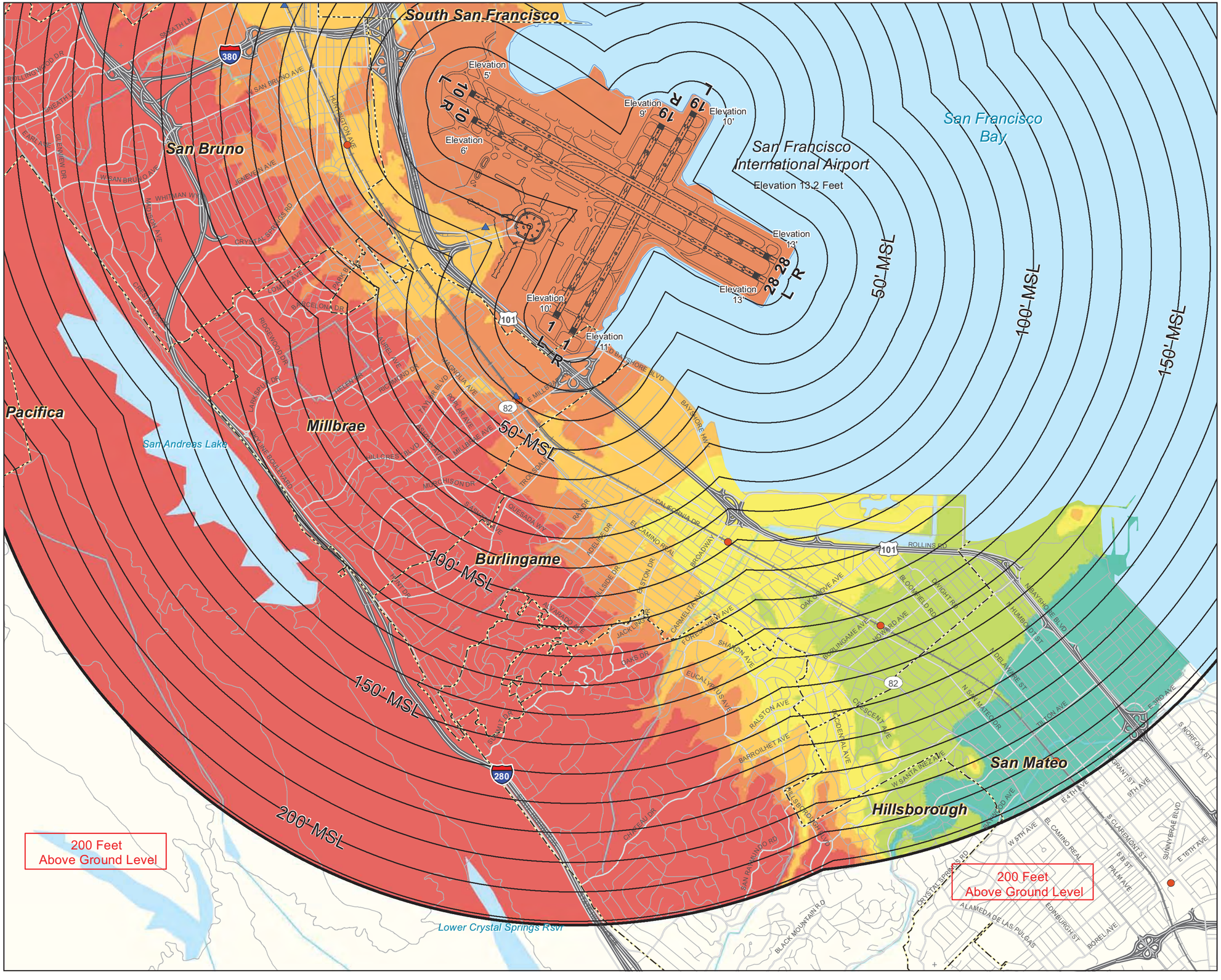

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A structure proponent must file FAA Form 7460-1, Notice of Proposed Construction or Alteration, for any proposed construction or alteration that meets any of the following Notification Criteria described in 14 CFR Part 77.9:

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§77.9(b) - Within 20,000 feet of a runway more than 3,200 feet in length, and exceeding a 100:1 slope imaginary surface (i.e., a surface rising 1 foot vertically for every 100 feet horizontally) from the nearest point of the nearest runway. The 100:1 surface is shown as follows:

20,000 Feet Limit From Nearest Runway

100 Elevation Above Mean Sea Level

Heights of 100:1 Surface Above Ground (AGL)

- Terrain Penetrations of Airspace Surface
- Less than 30
- 30-65
- 65-100
- 100-150
- 150-200
- 200 and more

§77.9(c) - Roadways, railroads, and waterways are evaluated based on heights above surface providing for vehicles; by specified amounts or by the height of the highest mobile object normally traversing the transportation corridor;

§77.9(d) - Any construction or alteration on any public-use or military airport (or heliport).

Structure proponents or their representatives may file via traditional paper forms via US mail, or online at the FAA's OE/AAA website, http://oeaaa.faa.gov

LEGEND

- BART Station
- CALTRAIN Station
- Municipal Boundary
- Railroad
- Freeway
- Road

Note:

Per 14 CFR Part 77, developers proposing structures taller than the indicated elevations must file Form 7460-1 with the FAA at least 30 days before the proposed construction. However, due to local requirements for a favorable FAA determination as a contingency for project approval, it is advisable to file the Form 7460-1 as soon as possible because the FAA can take several months to undertake aeronautical reviews.

Source:

Ricondo & Associates, Inc. and Jacobs Consultancy, based on 14 CFR Part 77, Subpart B, Section 77.9.

NORTH

0 0.15 0.3 0.6 Miles

Exhibit IV-12
FAA NOTIFICATION FORM 7460-1 FILING REQUIREMENTS -- SOUTH SIDE
Comprehensive Airport Land Use Plan
for the Environs of San Francisco International Airport

C/CAG
City/County Association of Governments
of San Mateo County, California

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4.5.3 AIRSPACE MAPPING

Part 77, Subpart C, establishes obstruction standards for the airspace around airports including approach zones, conical zones, transitional zones, and horizontal zones known as "imaginary surfaces." **Exhibit IV-13** depicts the Part 77 Civil Airport Imaginary Surfaces at SFO. The imaginary surfaces rise from the primary surface, which is at ground level immediately around the runways. The surfaces rise gradually along the approach slopes associated with each runway end and somewhat more steeply off the sides of the runways. The FAA considers any objects penetrating these surfaces, whether buildings, trees or vehicles travelling on roads and railroads, as obstructions to air navigation. Obstructions may occur without compromising safe air navigation, but they must be marked, lighted, and noted on aeronautical publication to ensure that pilots can see and avoid them.

Close-up views of the north and south sides of the Part 77 surfaces are provided in **Exhibit IV-14** and **Exhibit IV-15**, respectively. Additionally, **Exhibit IV-16** provides an illustration of the outer approach and transitional surfaces located on the southeast side of the Part 77 surfaces.

Together with its tenant airlines, SFO has undertaken a mapping effort to illustrate the critical aeronautical surfaces that protect the airspace required for multiple types of flight procedures such as those typically factored into FAA aeronautical studies, as shown on **Exhibit IV-17** and **Exhibit IV-18**. These aeronautical surfaces include those established in accordance with FAA Order 8260.3B, *U.S. Standard for Terminal Instrument Procedures (TERPS)*, and a surface representing the airspace required for One-Engine Inoperative (OEI) departures from Runway 28L (to the west through the San Bruno Gap).[15] The exhibits depict the lowest elevations from the combination of the OEI procedure surface and all TERPS surfaces. The surfaces are defined with Required Obstacle Clearance (ROC) criteria to ensure safe separation of the obstacles from aircraft using the flight procedures. Any proposed structures penetrating these surfaces are likely to receive Determinations of Hazard (DOH) from the FAA through the 7460-1 aeronautical study process. **These surfaces indicate the maximum feasible height at which structures can be considered compatible with Airport operations.**

Exhibit IV-19, which is provided for information purposes only, depicts a profile view of the lowest critical airspace surfaces along the extended centerline of Runway 10L-28R – the TERPS Obstacle Departure Procedure (ODP) surface, representing standard all-engines departures, and the approximate OEI surface developed by SFO through independent study in consultation with the airlines serving SFO. The exhibit also shows the terrain elevation beneath the airspace surfaces and various aircraft approach and departure profiles, based on varying operating assumptions. The exhibit illustrates a fundamental principle related to the design of airspace protection surfaces. The surfaces are always designed below the actual aircraft flight profile which they are designed to protect, thus providing a margin of safety. Note that the ODP climb profile is above the ODP airspace surface, and the OEI climb profile is above the OEI airspace surface.

[15] See Appendix F, Section F.3.2 for a discussion of one-engine inoperative procedures.

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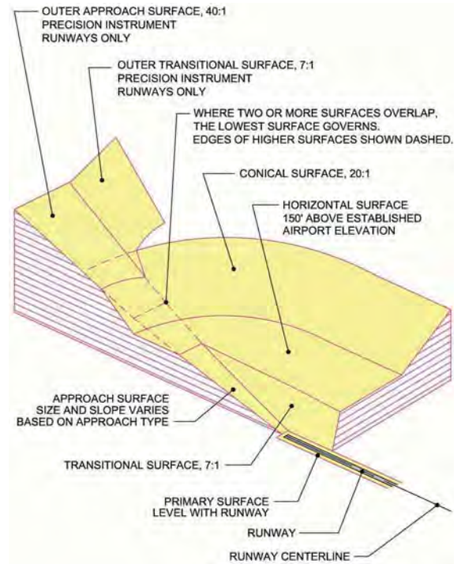
LEGEND

- 14 CFR Part 77 Civil Airport Imaginary Surfaces
- 100' MSL Elevation Contour, feet AMSL
- BART Stations
- CALTRAIN Stations
- Regional Park or Recreation Area
- Municipal Boundary
- Railroads
- Freeways
- Roads

Isometric Drawing of 14 CFR Part 77, Section 77.19 Civil Airport Imaginary Surfaces



Sources:

14 CFR Part 77 Surfaces: City and County of San Francisco, Ricondo & Associates, Inc. 2010.

NORTH

0 0.4 0.8 1.6 Miles

Exhibit IV-13

14 CFR PART 77
AIRPORT IMAGINARY SURFACES

Comprehensive Airport Land Use Plan
for the Environs of San Francisco International Airport

C/CAG

City/County Association of Governments
of San Mateo County, California

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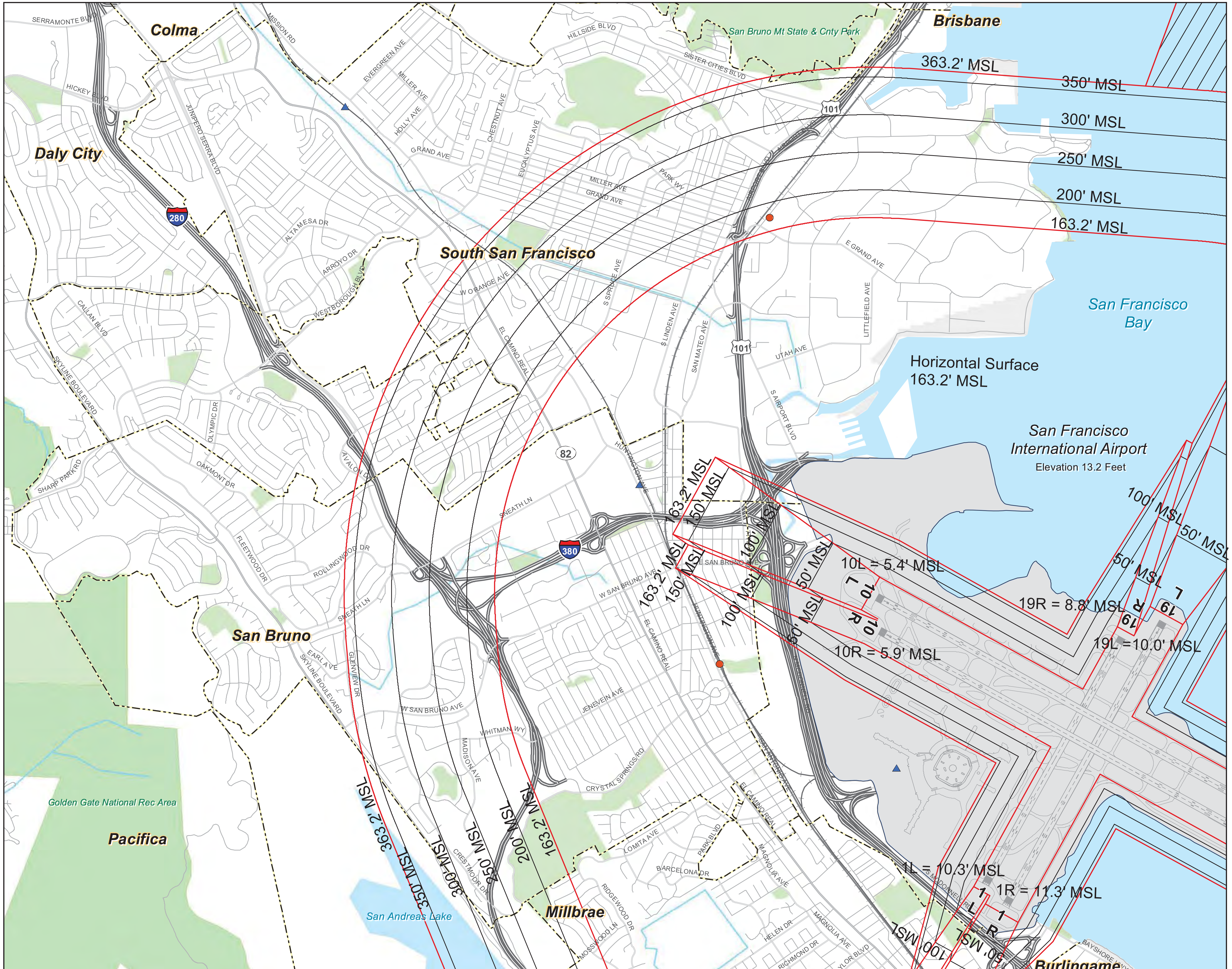
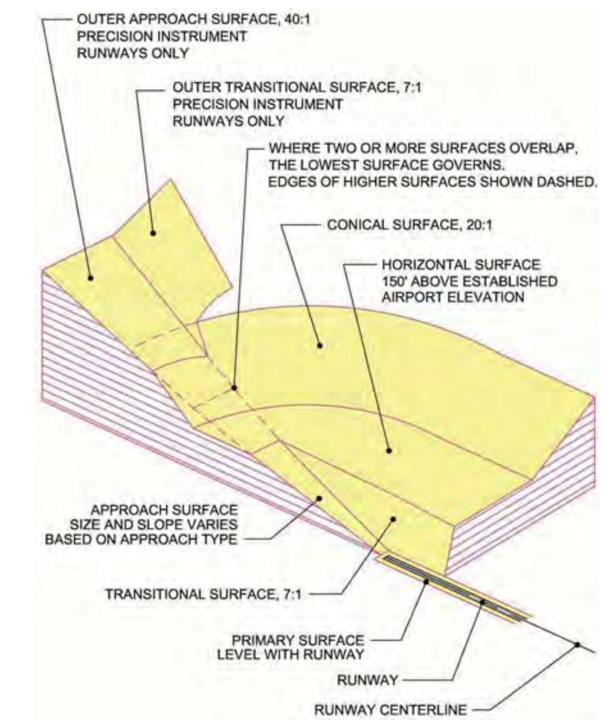


Colma
Daly City
Brisbane
South San Francisco
San Bruno
Pacifica
Millbrae
Burlingame
San Bruno Mt State & Cnty Park
Golden Gate National Rec Area
San Andreas Lake
San Francisco Bay
Horizontal Surface 163.2' MSL
San Francisco International Airport
Elevation 13.2 Feet
363.2' MSL
350' MSL
300' MSL
250' MSL
200' MSL
163.2' MSL
150' MSL
100' MSL
50' MSL
10L = 5.4' MSL
10R = 5.9' MSL
19R = 8.8' MSL
19L = 10.0' MSL
1L = 10.3' MSL
1R = 11.3' MSL
SERRAMONTE BLVD
HICKEY BLVD
JUNIPERO SERRA BLVD
MISSION RD
EVERGREEN AVE
MILLER AVE
HOLLY AVE
GRAND AVE
CHESTNUT AVE
EUCALYPTUS AVE
HILLSIDE BLVD
SISTER CITIES BLVD
PARK WY
AIRPORT BLVD
ALTA MESA DR
ARROYO DR
WESTBOROUGH BLVD
W ORANGE AVE
S SPRUCE AVE
S LINDEN AVE
SAN MATEO AVE
E GRAND AVE
LITTLEFIELD AVE
UTAH AVE
S AIRPORT BLVD
CALLAN BLVD
SKYLINE BOULEVARD
OLYMPIC DR
OAKMONT DR
SHARP PARK RD
AVALON DR
EL CAMINO REAL
HUNTINGTON AVE
SNEATH LN
FLEETWOOD DR
ROLLINGWOOD DR
EARL AVE
GLENVIEW DR
W SAN BRUNO AVE
E SAN BRUNO AVE
WHITMAN WY
MADISON AVE
JENEVEIN AVE
CRYSTAL SPRINGS RD
CRESTMOOR DR
LOMITA AVE
PARK BLVD
BARCELONA DR
MAGNOLIA AVE
RIDGEWOOD DR
MOSSWOOD LN
HELEN DR
RICHMOND DR
TAYLOR BLVD
SAN ANTONIO AVE
S MCDONNELL RD
BAYSHORE HWY
280
380
101
82

LEGEND

- 14 CFR Part 77 Civil Airport Imaginary Surfaces
- 100' MSL — Elevation Contour, feet AMSL
- BART Stations
- CALTRAIN Stations
- Regional Park or Recreation Area
- Municipal Boundary
- Railroads
- Freeways
- Roads

Isometric Drawing of 14 CFR Part 77, Section 77.19 Civil Airport Imaginary Surfaces



OUTER APPROACH SURFACE, 40:1
PRECISION INSTRUMENT
RUNWAYS ONLY
OUTER TRANSITIONAL SURFACE, 7:1
PRECISION INSTRUMENT
RUNWAYS ONLY
WHERE TWO OR MORE SURFACES OVERLAP, THE LOWEST SURFACE GOVERNS. EDGES OF HIGHER SURFACES SHOWN DASHED.
CONICAL SURFACE, 20:1
HORIZONTAL SURFACE
150' ABOVE ESTABLISHED
AIRPORT ELEVATION
APPROACH SURFACE
SIZE AND SLOPE VARIES
BASED ON APPROACH TYPE
TRANSITIONAL SURFACE, 7:1
PRIMARY SURFACE
LEVEL WITH RUNWAY
RUNWAY
RUNWAY CENTERLINE

Sources:

14 CFR Part 77 Surfaces: City and County of San Francisco, Ricondo & Associates, Inc., 2010

NORTH

0 0.125 0.25 0.5 Miles

Exhibit IV-14

14 CFR PART 77 AIRPORT IMAGINARY SURFACES -- NORTH SIDE

Comprehensive Airport Land Use Plan for the Environs of San Francisco International Airport

C/CAG

City/County Association of Governments of San Mateo County, California

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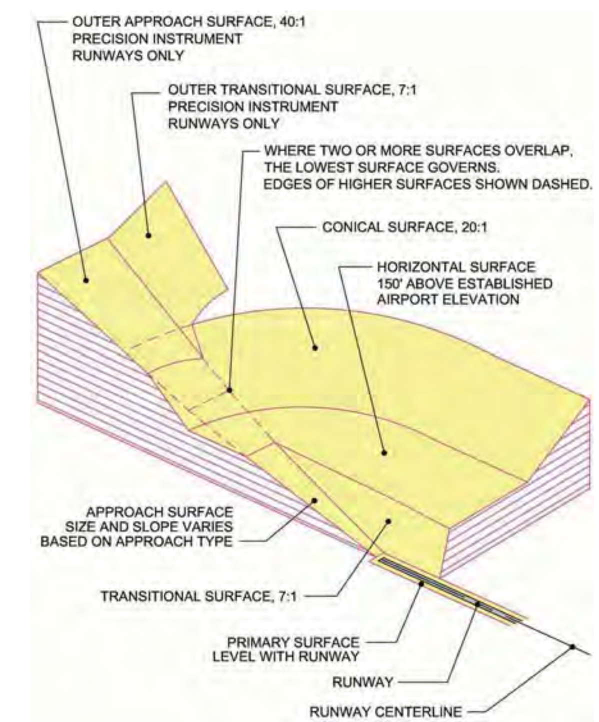
LEGEND

- 14 CFR Part 77 Civil Airport Imaginary Surfaces
- 100' MSL — Elevation Contour, feet AMSL
- BART Stations
- CALTRAIN Stations
- Regional Park or Recreation Area
- Municipal Boundary
- Railroads
- Freeways
- Roads

Isometric Drawing of 14 CFR Part 77, Section 77.19 Civil Airport Imaginary Surfaces



Sources:

14 CFR Part 77 Surfaces: City and County of San Francisco, Ricondo & Associates, Inc., 2010

NORTH

0 0.125 0.25 0.5 Miles

Exhibit IV-15

14 CFR PART 77 AIRPORT IMAGINARY SURFACES -- SOUTH SIDE

Comprehensive Airport Land Use Plan
for the Environs of San Francisco International Airport

C/CAG

City/County Association of Governments
of San Mateo County, California

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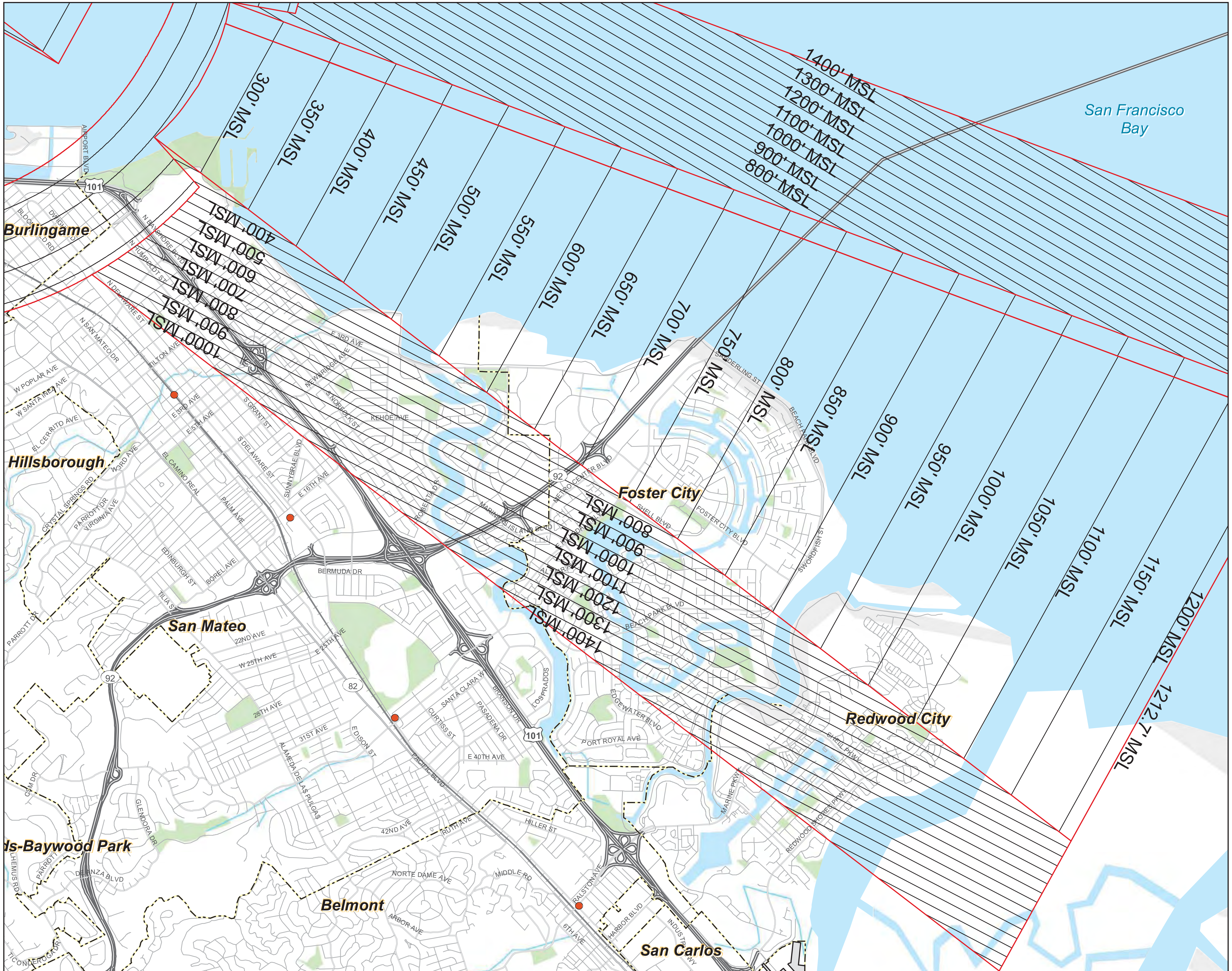
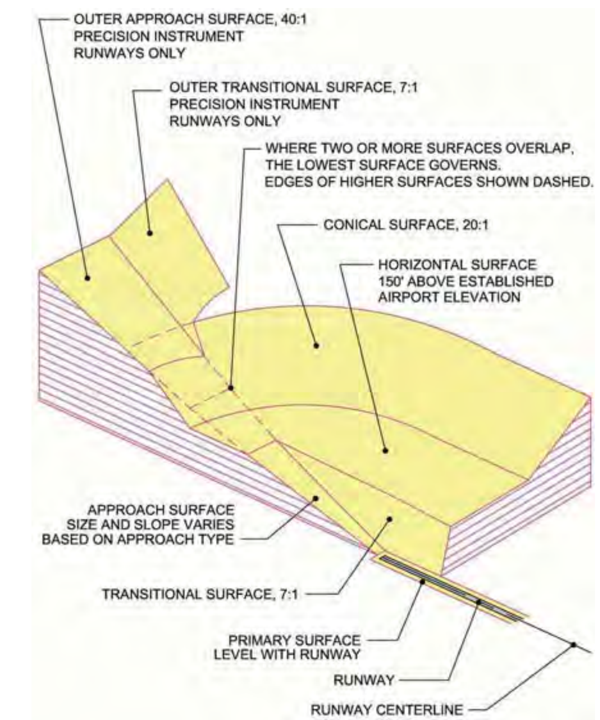


LEGEND

- 14 CFR Part 77 Civil Airport Imaginary Surfaces
- 100' MSL — Elevation Contour, feet AMSL
- BART Stations
- CALTRAIN Stations
- Regional Park or Recreation Area
- Municipal Boundary
- Railroads
- Freeways
- Roads

Isometric Drawing of 14 CFR Part 77, Section 77.19 Civil Airport Imaginary Surfaces



Sources:

14 CFR Part 77 Surfaces: City and County of San Francisco, Ricondo & Associates, Inc., 2010

NORTH

0 0.175 0.35 0.7 Miles

Exhibit IV-16

14 CFR PART 77 AIRPORT IMAGINARY SURFACES -- FAR SOUTHEAST SIDE

Comprehensive Airport Land Use Plan for the Environs of San Francisco International Airport

C/CAG

City/County Association of Governments of San Mateo County, California

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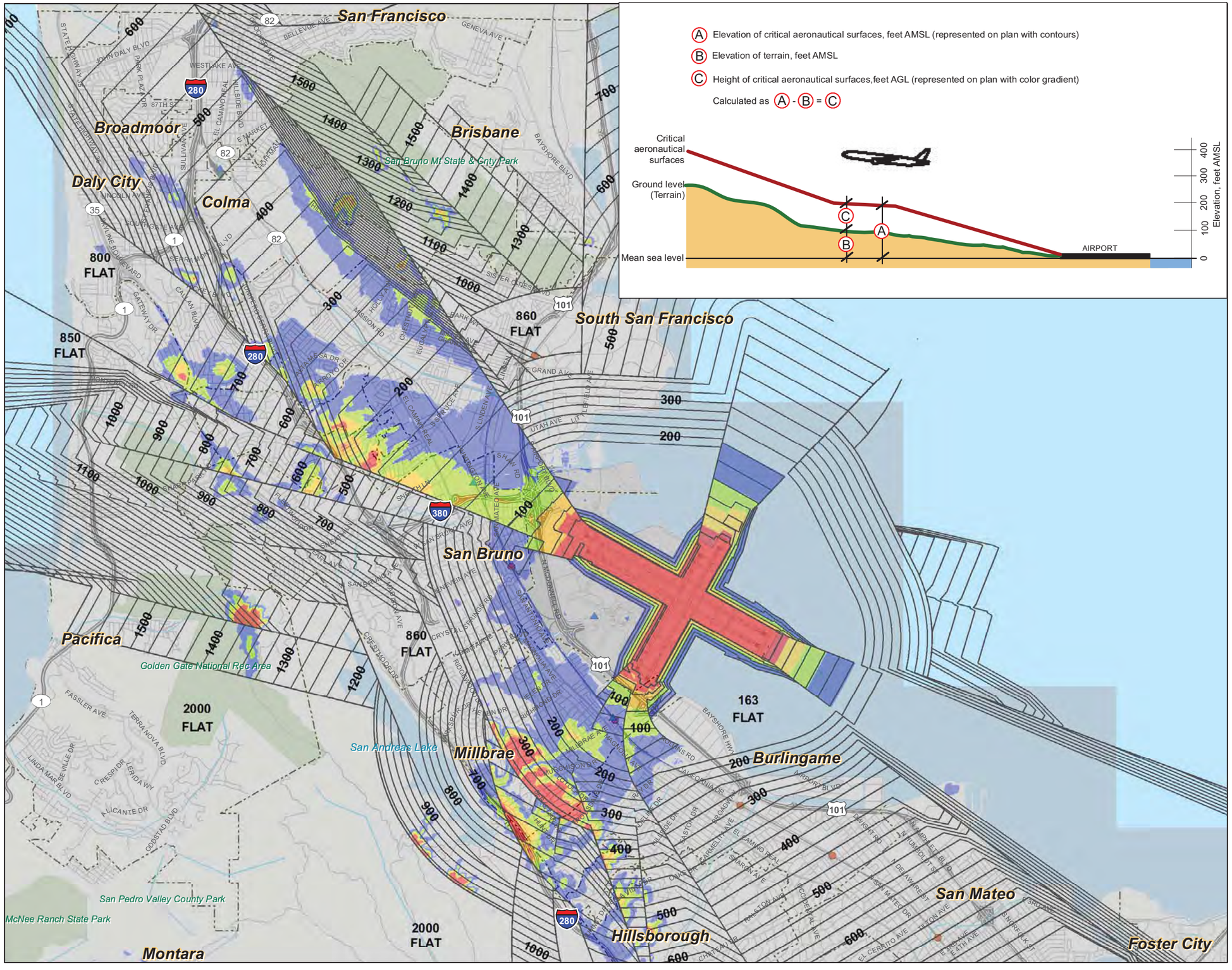

LEGEND

- (A) 100 — Elevation of critical aeronautical surfaces, feet Above Mean Sea Level (AMSL), North American Vertical Datum of 1988 (NAVD88)
- (C) **Height of Critical Aeronautical Surfaces, Feet Above Ground Level (AGL)**
  - 35 and lower
  - 35- 65
  - 65 - 100
  - 100 - 150
  - 150 and more
- Airport Property
- BART Station
- CALTRAIN Station
- Regional Park or Recreation Area
- Municipal Boundary
- Railroad
- Freeway
- Road

Notes:

1. This map is intended for informational and conceptual planning purposes, generally representing the aeronautical surfaces considered most critical by San Francisco International Airport (SFO) and its constituent airlines. It does not represent actual survey data, nor should it be used as the sole source of information regarding compatibility with airspace clearance requirements in the development of data for an FAA Form 7460-1, Notice of Proposed Construction or Alteration. SFO does not certify its accuracy, information, or title to the properties contained in this plan. SFO does make any warrants of any kind, express or implied, in fact or by law, with respect to boundaries, easements, restrictions, claims, overlaps, or other encumbrances affecting such properties.

2. This map does not replace the FAA's obstruction evaluation / airport airspace analysis (OE/AAA) review process. Proposing construction at elevations and heights that are lower than the critical aeronautical surfaces shown on this map, (a) does not relieve the construction sponsor of the obligation to file an FAA Form 7460-1, and (b) does not ensure that the proposal will be acceptable to the FAA, SFO, air carriers, or other agencies or stakeholders. SFO, San Mateo County, and local authorities having jurisdiction reserve the right to re-assess, review, and seek modifications to projects that may be consistent with this critical aeronautical surfaces map but that through the FAA OE/AAA process are found to have unexpected impacts to the safety or efficiency of operations at SFO.

Sources: San Francisco International Airport, Jacobs Consultancy, and Planning Technology Inc., 2009

NORTH

0 0.25 0.5 1 Miles

Exhibit IV-17

CRITICAL AERONAUTICAL SURFACES -- NORTHWEST SIDE

Comprehensive Airport Land Use Plan for the Environs of San Francisco International Airport

C/CAG

City/County Association of Governments of San Mateo County, California

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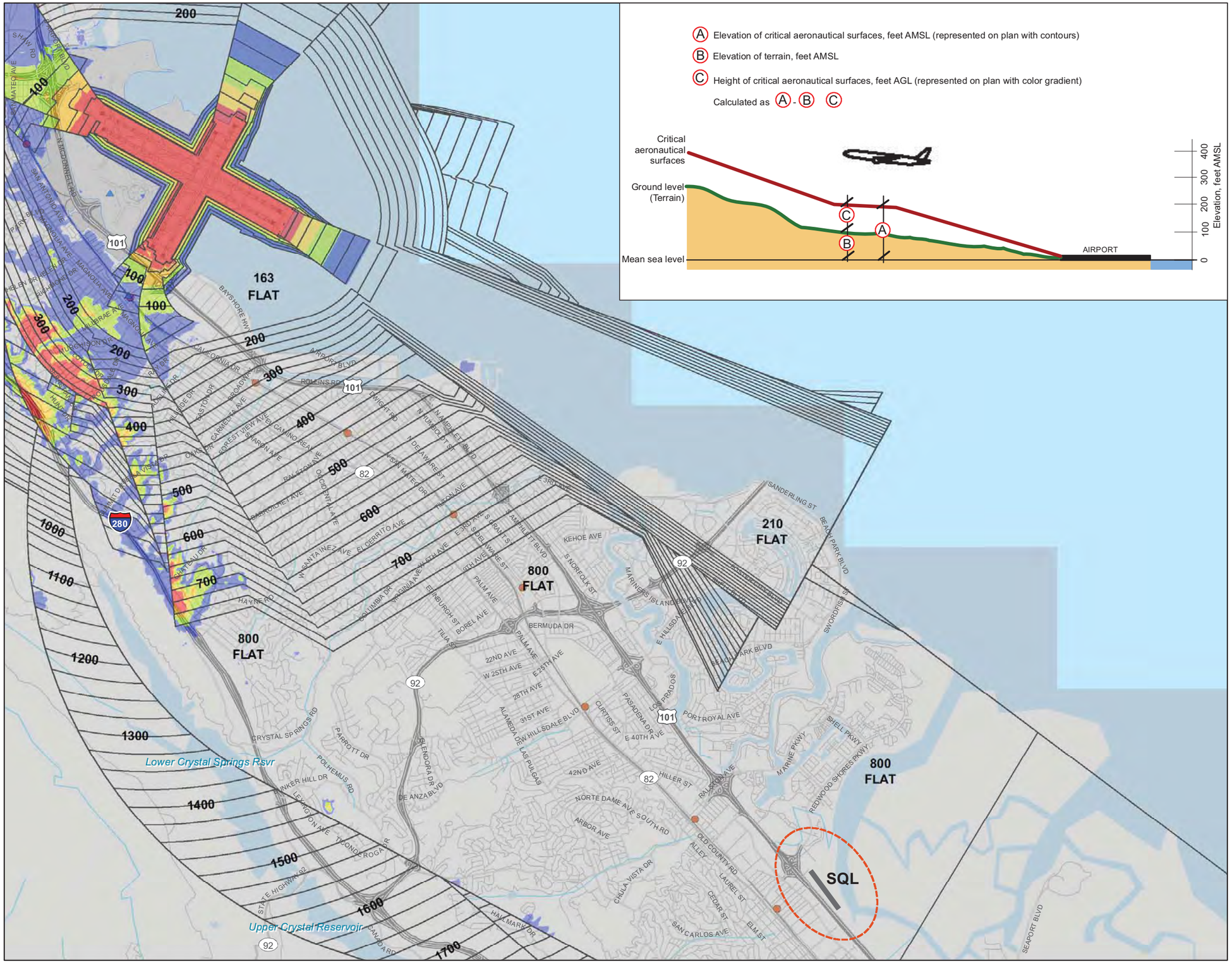

LEGEND

- A — 100 — Elevation of critical aeronautical surfaces, feet Above Mean Sea Level (AMSL), North American Vertical Datum of 1988 (NAVD88)
- C **Height of Critical Aeronautical Surfaces, Feet Above Ground Level (AGL)**
  - 35 and lower
  - 35- 65
  - 65 - 100
  - 100 - 150
  - 150 and more
- Airport Property
- BART Station
- CALTRAIN Station
- Regional Park or Recreation Area
- Municipal Boundary
- Railroad
- Freeway
- Road

Notes:

1. This map is intended for informational and conceptual planning purposes, generally representing the aeronautical surfaces considered most critical by San Francisco International Airport (SFO) and its constituent airlines. It does not represent actual survey data, nor should it be used as the sole source of information regarding compatibility with airspace clearance requirements in the development of data for an FAA Form 7460-1, Notice of Proposed Construction or Alteration. SFO does not certify its accuracy, information, or title to the properties contained in this plan. SFO does make any warrants of any kind, express or implied, in fact or by law, with respect to boundaries, easements, restrictions, claims, overlaps, or other encumbrances affecting such properties.

2. This map does not replace the FAA's obstruction evaluation / airport airspace analysis (OE/AAA) review process. Proposing construction at elevations and heights that are lower than the critical aeronautical surfaces shown on this map, (a) does not relieve the construction sponsor of the obligation to file an FAA Form 7460-1, and (b) does not ensure that the proposal will be acceptable to the FAA, SFO, air carriers, or other agencies or stakeholders. SFO, San Mateo County, and local authorities having jurisdiction reserve the right to re-assess, review, and seek modifications to projects that may be consistent with this critical aeronautical surfaces map but that through the FAA OE/AAA process are found to have unexpected impacts to the safety or efficiency of operations at SFO.

Sources: San Francisco International Airport, Jacobs Consultancy, and Planning Technology Inc., 2009

NORTH

0 0.25 0.5 1 Miles

Exhibit IV-18

CRITICAL AERONAUTICAL SURFACES -- SOUTHEAST SIDE

Comprehensive Airport Land Use Plan
for the Environs of San Francisco International Airport

C/CAG

City/County Association of Governments
of San Mateo County, California

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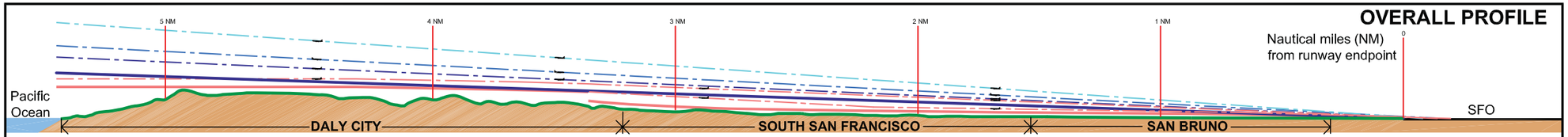
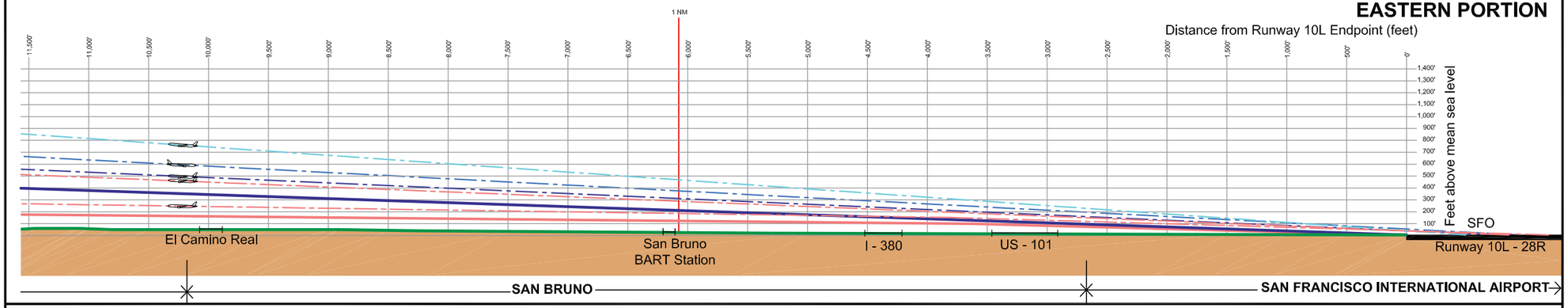
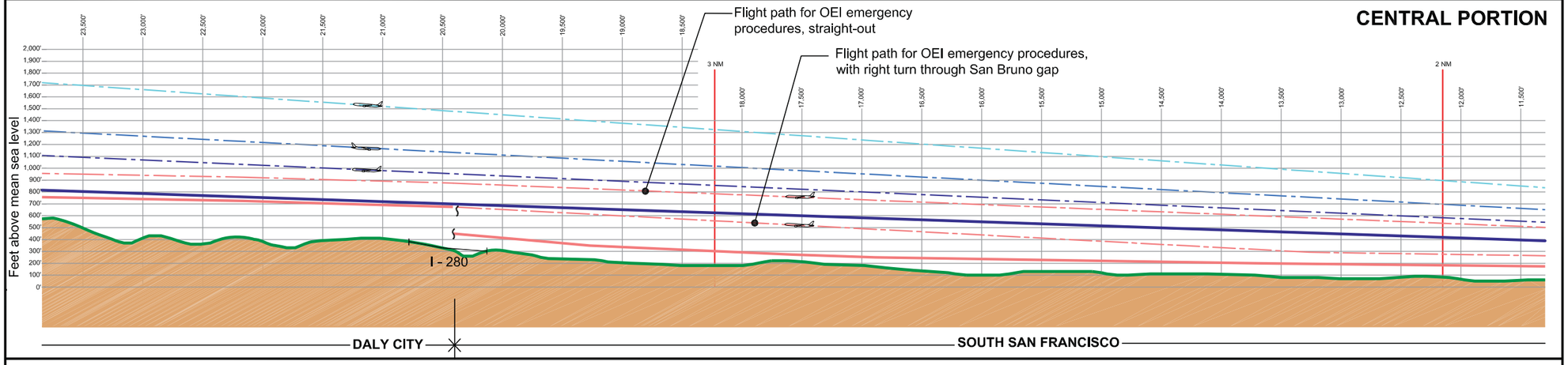
OVERALL PROFILE



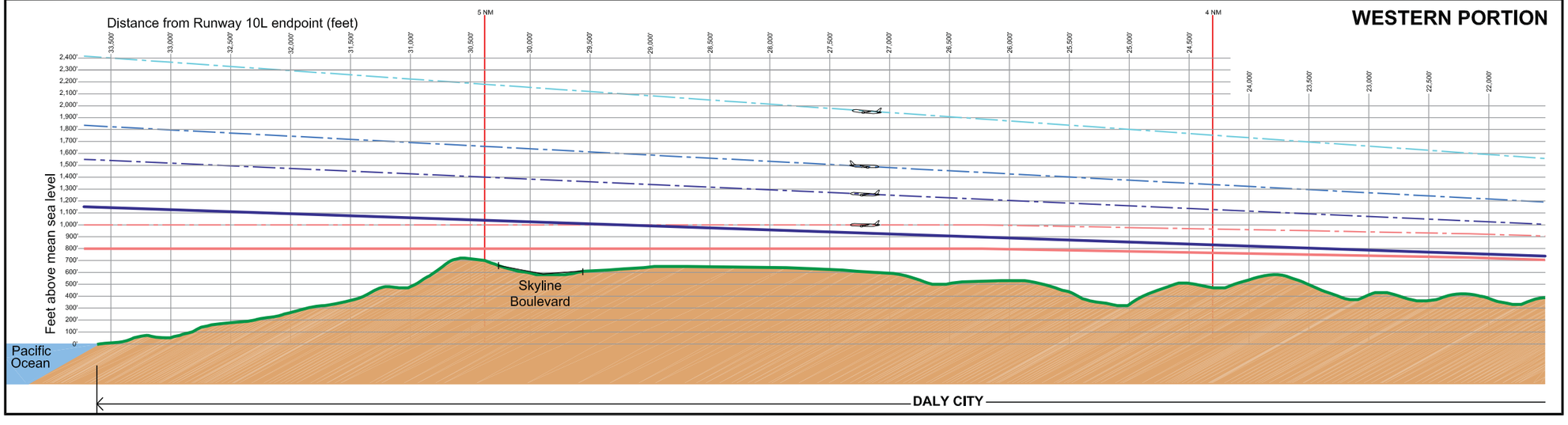
EASTERN PORTION



CENTRAL PORTION



WESTERN PORTION



LEGEND

- Terrain Profile
- One Engine Inoperative (OEI) emergency flight path (approximate)
- OEI airspace protection surface

Representative Standard Flight Procedures

- Runway 28R departure: 270 feet per nautical mile minimum climb gradient, as specified in Obstacle Departure Procedure (ODP)
- Obstacle Clearance Surface (OCS) for ODP
- Runway 28R departure: 425 feet per nautical mile minimum climb gradient, as specified in several Standard Instrument Departure (SID) procedures

  Note: Aircraft on departure usually climb at a higher rate than the specified minimum
- Runway 10L approach: 3.0° glidepath angle
- Representative at-scale aircraft - Boeing 777-300

KEY PLAN

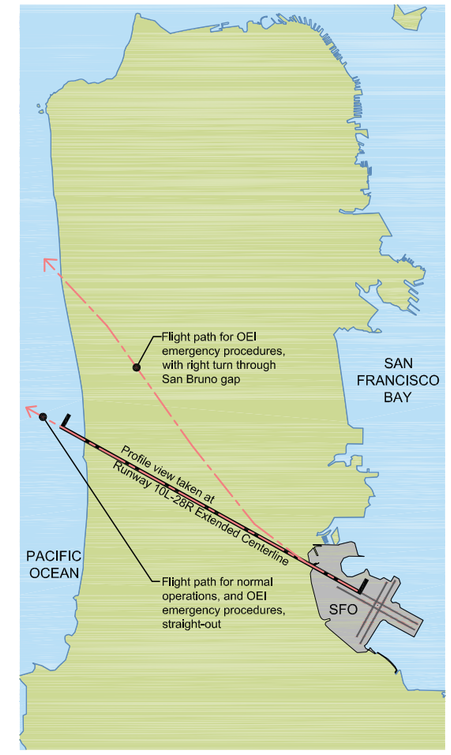


Exhibit IV-19

PROFILE VIEW ALONG RUNWAY 10L EXTENDED CENTERLINE RUNWAY 10L APPROACHES / RUNWAY 28R DEPARTURES

Comprehensive Airport Land Use Plan
For the Environs of San Francisco International Airport

C/CAG

City / County Association of Governments of San Mateo County, California

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4.5.4 AIRSPACE PROTECTION POLICIES

The following airspace protection policies (AP) shall apply to the ~~CLUP~~ALUCP.

AP-1 COMPLIANCE WITH 14 CFR PART 77, SUBPART B, NOTICE OF PROPOSED CONSTRUCTION OR ALTERATION

AP-1.1 Local Government Responsibility to Notify Project Sponsors

Local governments ~~have the responsibility to~~should notify sponsors of proposed projects at the earliest opportunity to file Form 7460-1, *Notice of Proposed Construction or Alteration*, with the FAA for any proposed project that would exceed the FAA notification heights, as shown approximately on Exhibit IV-10. Under Federal law, it is the responsibility of the project sponsor to comply with all notification and other requirements described in 14 CFR Part 77. This requirement applies independent of this ALUCP.

AP-1.2 FAA Aeronautical Study Findings Required ~~Prior To~~Before Processing Development Application

The sponsor of a proposed project that would exceed the FAA notification heights, as shown approximately on Exhibit IV-10, shall present to the local government permitting agency with his or her application for a development permit, a copy of the findings of the FAA's aeronautical study, or evidence demonstrating that he or she is exempt from having to file an FAA Form 7460-1. It is the responsibility of the local agency to consider the FAA determination study findings as part of its review and decision on the proposed project.

AP-2 COMPLIANCE WITH FINDINGS OF FAA AERONAUTICAL STUDIES

Project sponsors shall be required to comply with the findings of FAA aeronautical studies with respect to any recommended alterations in the building design and height and any recommended marking and lighting of their structures for their proposed projects to be deemed consistent with this ~~CLUP~~ALUCP.

AP-3 MAXIMUM COMPATIBLE BUILDING HEIGHT

In order to be deemed consistent with the ~~CLUP~~ALUCP, the maximum height of a new building must be the lower of (1) the height shown on the SFO critical aeronautical surfaces map (Exhibits IV-17 and IV-18), or (2) the maximum height determined not to be a "hazard to air navigation" by the FAA in an aeronautical study prepared pursuant to the filing of Form 7460-1.

For the vast majority of parcels, the height limits established in local zoning ordinances are lower than the critical airspace surfaces. In those cases, the zoning district height regulations will control. Compliance with the zoning district height and the SFO critical aeronautical surfaces map, however, does not relieve the construction sponsor of the obligation to file an FAA Form 7460-1 *Notice of Proposed Construction or Alteration*, if required, and to comply with the determinations resulting from the FAA's aeronautical study.

For a project to be consistent with this ~~CLUP~~ALUCP, no local agency development permits shall be issued for any proposed structure that would penetrate the aeronautical surfaces shown on Exhibits IV-17 and IV-18 or the construction of which **has not** received a Determination of No ~~favorable determination~~

~~from~~Hazard from the FAA, or which would cause the FAA to increase the minimum visibility requirements for any instrument approach or departure procedure at the Airport.

AP-4 OTHER FLIGHT HAZARDS ~~SHALL BE PROHIBITED~~ARE INCOMPATIBLE

Proposed land use~~s~~ with characteristics ~~actions that include land uses~~ that may cause visual, electronic, or wildlife hazards, particularly bird strike hazards, to aircraft taking off or landing at the Airport or in flight ~~shall be prohibited~~are incompatible in Area B. They may be permitted only if the uses are consistent with FAA rules and regulations. Proof of consistency with FAA rules and regulations and with any performance standards cited below must be provided to the Airport Land Use Commission (C/CAG Board ~~of Directors~~) by the sponsor of the proposed land use action.

Specific characteristics that may create hazards to aircraft in flight and which ~~shall be prohibited~~are incompatible include:

(a) Sources of glare, such as highly reflective buildings or building features, or bright lights, including search lights or laser displays, which would interfere with the vision of pilots making approaches to the Airport.~~;~~

(b) Distracting lights that that could be mistaken by pilots on approach to the Airport for airport identification lighting, runway edge lighting, runway end identification lighting, or runway approach lighting.~~;~~

(c) Sources of dust, smoke, or water vapor that may impair the vision of pilots making approaches to the Airport.~~;~~

(d) Sources of electrical interference with aircraft or air traffic control communications or navigation equipment, including radar.~~;~~

(e) Land uses that, as a regular byproduct of their operations, produce ~~Sources of~~ thermal plumes with the potential to rise high enough and at sufficient velocities to interfere with the control of aircraft in flight. Upward velocities of 4.3 meters (14.1 feet) per second at altitudes above 200 feet above the ground shall be considered as potentially interfering with the control of aircraft in flight.[16]~~;~~

(f) Any use that creates an increased attraction for wildlife, particularly large flocks of birds, that is inconsistent with FAA rules and regulations, including, but not limited to, FAA Order 5200.5A, *Waste Disposal Sites On or Near Airports*, FAA Advisory Circular 150/5200-33B, *Hazardous Wildlife Attractants On or Near Airports*, and any successor or replacement orders or advisory circulars. Exceptions to this policy are acceptable for wetlands or other environmental mitigation projects required by ordinance, statute, court order, or Record of Decision issued by a federal agency under the National Environmental Policy Act.

[16] This is a threshold established by the California Energy Commission in its review of power plant licensing applications. See *Blythe Solar Power Project: Supplemental Staff Assessment, Part 2*,. CEC-700-2010-004-REV1-SUP-PT2, July 2010. California Energy Commission. Docket Number 09-AFC-6, p. 25. This criterion is based on guidance established by the Australian Government Civil Aviation Authority (Advisory Circular AC 139-05(0), June 2004). The FAA's Airport Obstructions Standards Committee (AOSC) is studying this matter but has not yet issued specific guidance.

4.5.5 iALP AIRSPACE TOOL

In consultation with C/CAG, SFO developed the iALP Airspace Tool, a web-based, interactive tool to evaluate the relationship of proposed buildings with the Airport's critical airspace surfaces. The iALP Airspace Tool is designed to assist planners, developers, and other interested persons with the implementation of the airspace protection policies of the SFO ~~CLUP~~ALUCP. The tool helps users determine: (1) the maximum allowable building height at a given site, and/or (2) whether a building penetrates a critical airspace surface, and by how much, given the proposed building height.

A more detailed description of the iALP Airspace Tool and a tutorial explaining how to use it is presented in **Appendix J**.

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